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PUBLIC HEALTH CONGRESS

REPORT

OF THE COMMITTEE

ON

HOSPITAL EQUIPMENT

1934



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MINISTRY OF HEALTH

Report of the Committee on the Standardization and Simplification of the Requirements of Local Authorities

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Report of the Committee on the Standardization and Simplification of the Requirements of Local Authorities.

To Lieut.-Commander The Rt. Hon. Sir E. HILTON YOUNG, G.B.E.,
D.S.O., D.S.C., M.P., Minister of Health.

SIR,

1. On the 5th January, 1931, your predecessor, Mr. Greenwood, after consultation with the Board of Trade, issued a circular letter (1170) to all Local Authorities advising the use, wherever practicable, of goods complying with the specifications of the British Engineering Standards Association (now the British Standards Institution). The circular was, by his direction, followed by the calling at the Ministry of a conference of representatives of the Associations of Local Authorities, to see what more could be done towards standardization, whether in the strict sense or in the sense of simplifying the requirements of Local Authorities and co-ordinating their purchases. Before this conference met, Mr. Greenwood gave the opening address at a meeting convened by the British Engineering Standards Association with the intention of commending standardization to the building industry, at which meeting representatives of the Associations of Local Authorities were present.

The conference held at the Ministry was attended by representatives of several Departments of Government, who explained what had been done in their respective spheres, and pointed out, also, the advantage which might accrue to certain British industries. If, that is to say, the definite adhesion of Local Authorities to standards could be secured, British manufacturers would know where they stood and the market would be strengthened against foreign competition. As the upshot of this Conference we were constituted a Committee in January, 1932, with the objects of considering and collating information received from Local Authorities bearing on the standardization of articles used by them and the simplification of their requirements, suggesting possibilities of combination between Local Authorities, and bringing to the notice of the British Standards Institution articles which might suitably be considered for standardization. At the time of our appointment we were informed that another Committee had been set up, under the auspices of the Public Health Congress, to explore the possibilities of standardizing hospital equipment.

2. Our Committee comprises representatives of the Association of Municipal Corporations, the County Councils Association, the Urban District Councils Association, the Rural District Councils

Association, and the Metropolitan Boroughs' Standing Joint Committee. Alderman Sir Miles E. Mitchell, of Manchester, a representative of the Association of Municipal Corporations, was appointed to be our Chairman. We have to express our regret that owing to pressure of other duties Sir Miles Mitchell has recently found it necessary to resign the Chairmanship. He has been succeeded by Mr. A. N. C. Shelley. A Secretary was made available for our Committee from the Ministry of Health, and much of our work has consisted in arranging, through him, for the exchange, supply, and publication of information coming from Local Authorities, Departments of Government, and the British Standards Institution.

3. The information we have received shows that much has been done in this country, not merely by the Government and by Local Authorities, but also in commercial circles, towards standardization and simplification. Much has been done, also, in foreign countries—and still more has been published on the subject, especially in the United States of America. It is almost always difficult to assess results, because the terms employed have not been standardized, even in English and American usage, and such "standardization" as we have been considering is confused with "rationalization," "taylorization" (the observation and accurate timing of functions), "normalization" (another term for what we have called simplification), and with an intensification of mechanized processes. While this Report was being prepared, it came to our notice that the Committee appointed by the Public Health Congress, above mentioned, had in its draft Report included an account of foreign investigations and, since that Report will be published independently at an early date, we have decided not to overload our own Report by repetition. We have agreed with them on the meanings to be assigned, for our common purposes, to standardization and simplification, namely :—

Standardization, the production of a standard unit incorporating the best points of all available types (this appears to be the method most favoured in Germany);

Simplification, the adoption of the type or types most generally used (this is the method most employed in the U.S.A.).

4. Much work has been accomplished by many Local Authorities, particularly in the direction of internally standardizing or simplifying their own requirements by adopting for all departments of the Authority the type or types of an article in most general use in those departments. It has been the universal experience of those Local Authorities who have undertaken this process of simplification that the operation is profitable in money and time saved. We give a few examples in paragraph 6 below, but we

may here remark that one County Council discovered on undertaking a review of this nature that its various departments were ordering no fewer than 40 different varieties of soap. Unnecessary diversity such as this between goods of a similar or the same nature used in common by the various Committees and departments of a Local Authority is clearly unjustifiable. We, therefore, suggest that every Local Authority which, by reason of the scale of its operations, is exposed to this danger of duplication should, if it has not yet done so, be moved to undertake the task of simplifying the range of its requirements.

This process of simplification can the more readily be undertaken by any Local Authority in that it does not require any particular technical knowledge beyond that already possessed by the Local Authority's staff. We refer below to the possibility of mutual help, in regard to some specialized commodities. The classes of goods that most readily lend themselves to this process are such things as fuels, textiles, cleaning materials, stationery, and office requisites, which almost every department of a Local Authority uses. The County Council previously referred to has now standardized some 1,400 commodities (including foodstuffs) in common use at its public assistance institutions. Another County Council has drawn up a list of 500 articles which can be standardized.

5. The advantages of simplification seem to us clear. Apart from the savings which can be effected by the elimination of unnecessary duplication and waste, it becomes possible for goods to be bought in bulk, instead of in small quantities, and they can in consequence be bought at a reduced price. The margin between wholesale and retail prices can, to a large extent, be saved to the Authority while it, at the same time, obtains goods of equal or better quality because purchased to a definite standard. Simplification, moreover, promotes internal administrative economy by making it possible to have only one contract for each class of goods. Time is saved in the clerical department in preparing one contract instead of several; in checking accounts the accountant of the Authority and later the auditor need refer only to one contract instead of a series of contracts. And though each of these items may in itself be but small we are satisfied that the aggregate amount of office time involved is well worth saving.

Another advantage of simplification is that it will often make it possible to specify in the Authority's contracts standard articles of good quality, without naming any particular brand or make, instead of purchasing proprietary articles. Though proprietary articles may in general be reliable it is clearly undesirable to limit the field of quotation by reference to them if a general standard is available or even if a standard can be prepared by the Authority.

Simplification, in fine, is a thing that is not only worth doing in itself to get rid of purposeless overlapping; it also leads directly

to the purchase of goods in quantity instead of in dribblets, and, thereby, to monetary saving and to a reduction in the number of transactions it is necessary to carry out.

6. We append here a few samples of what has been accomplished by simplifying and standardizing requirements. We have culled two of these examples from American sources.

A. (County Council.)

Number of stock articles carried as office requisites reduced from 298 to 216. By purchase in bulk a saving of £500 made in one year on office requisites alone.

Types of envelopes reduced from 23 to 11.

A saving of more than £8,000 effected in one year in the cost of supply of provisions, drugs, and clothing, to institutions.

B. (County Borough.)

Envelopes: by standardizing and purchasing in bulk, a saving of 42.5 per cent. was effected. (Another County Borough estimated a saving of £2,000 a year by standardizing its stationery.)

C. (County Borough.)

22 kinds of disinfectants have been reduced to 11.

32 kinds and sizes of towels have been reduced to 12.

37 kinds and classes of cloth have been reduced to 10.

D. (A Railway Company.)

24 kinds of sweeping brushes reduced to 4.

75 types of drawing paper reduced to 25.

130 classes of paints reduced to 55.

E. (An American State.)

75 kinds of soap and cleaning materials reduced to 10, and a saving of 31 per cent. effected. (Another State reduced 32 kinds of soap to 5.)

F. (An American City.)

40 different brands of lubricating oils used for the municipal transport were reduced to 5.

In passing we may remark that 66 varieties of paving brick in regular use in the United States of America have, under the auspices of the Federal Department of Commerce, been brought down to four styles and sizes, and that with the support of the American Hospital Association a standard hospital bed has been produced where before there were several hundred varieties; we understand that these standards have received a wide measure of acceptance.

7. We have shown above that purchasing in bulk is the natural corollary to simplification of requirements and we think that the most convenient way for Local Authorities to approach the task

of simplification is either by setting up a Central Purchasing Committee for the buying of various classes of goods needed by the Council, or (if this is thought too elaborate) by charging the department that is the largest user of any article with the duty of dealing with the tenders of all departments for that article, which they can then be left to order as needed. The primary necessity for the successful introduction and smooth working of either of these systems is that the chief officers of all the departments affected be taken into consultation, so that in drawing up the one common form of tender it can be secured that the qualities of goods or materials finally selected are those generally acceptable. The reports that we have received from Local Authorities show that simplification of requirements and collective purchasing have usually been attained by inter-departmental co-operation in this way, beginning with a comparatively small list of articles which has gradually been extended as the advantages of the system become apparent.

We urge that all appropriate Local Authorities should consider the setting up either of a Central Purchasing Committee or of the modified form of the system we have indicated, and we suggest that the Minister should continue to press upon Local Authorities the desirability of standardizing and simplifying their requirements, and adopting improved methods of purchase.

8. There are, however, numerous smaller urban and rural authorities who could not, even after removal of any existing duplication, obtain for themselves the full benefits of simplification and bulk purchase. Here we urge co-operation either between Local Authorities similarly situated or, preferably, with a larger neighbouring authority. Many classes of goods required by the smaller authority will be similar to those used by the larger, and the same specifications could be used. A small urban or rural authority might, for example, obtain copies of the specifications prepared by the County Council, and could then arrange for the supply of its needs on those specifications. Even this would not ordinarily secure for it such favourable terms of purchase as those quoted to the larger authority, and the fullest advantage might be secured if arrangements for purchase were made through the larger authority, the smaller authority retaining freedom to place its own orders as and when the goods were actually required. We understand that arrangements of this nature have already been made in some places, but they imply a measure of co-operation far beyond what Local Authorities have contemplated as a rule, and there is scope for wide development in voluntary co-operation of this kind.

We think also that those Local Authorities who employ expert officials, such as stationery clerks who co-ordinate their requirements for printing, paper, forms, and the like (and there may be other

occasions for material help where specialized knowledge is required) might be willing to lend their services for a short period to advise and assist the smaller authorities, who are not in a position themselves to employ such officials.

9. To look at the problem we have just been considering from another aspect: if 10,000 units of a particular article can be more advantageously bought when they are, firstly, produced according to a predetermined standard, and, secondly, are produced in bulk rather than in separate lots of 1,000, the question is—can any combination of purchasers be brought about, where a single purchaser's consumption is too small to obtain this dual advantage? A single Department of Government or a Local Authority working on the scale of the London County Council might require 10,000 standard units at a time, and be able to arrange delivery so as to obtain the fullest advantages. A large provincial authority might be able to use 10,000 units for its various departments, trading and non-trading, but might have to arrange delivery at longer intervals and, in the first instance, also to co-ordinate the requirements of its different departments. So far, whatever difficulty exists is shown by the information we have gathered (see paragraph 7 above) to be not insuperable. Real difficulty, which up to the present has not been solved in practice on a scale large enough to give reliable experience, arises where the consumers are too small to absorb the hypothetical optimum number of standard units. In order to obtain the dual advantage of standardization and bulk purchase they then have to arrange not merely to work to a common standard but to have goods delivered to appropriate depots for their various needs. The last named difficulty falls again to be considered according to different methods which may be adopted to solve it. For example, to take a purely hypothetical instance, it might be considered whether it was expedient for the urban districts of Blackacre and Whitacre situate in the County of Loamshire, adjoining the County Borough of Greencastle, to combine between themselves for standards and for purchases, or to work to Greencastle standards and (perhaps) draw supplies from Greencastle, or to join with the Loamshire County Council for either or both purposes—or, indeed, with some combination larger than two Local Authorities but smaller than the County. These problems can be solved only by practical experience. We have, however, shown that all three stages, namely, the initial fixing of standards or the initial simplification, the co-ordination of purchases within the area of one authority, and the combination or joint working of authorities so as to secure the same advantages, irrespective of local government boundaries, deserve consideration. There is no one road to success, and the most we can do at this stage is to indicate to Local Authorities that there is a problem, or a group of related problems, and that it is for them, as trustees for their ratepayers, to consider which of these plans is best suited for local

requirements. The plan will differ in different parts of the country: the one thing which should not be regarded as permissible to-day is continuance in haphazard purchase. In this paragraph we have spoken of Local Authorities as trustees for their ratepayers, but Local Authorities are, equally, integral portions of the Body Politic, and more than local economy and local advantage is involved. It is scarcely recognized by the public, and we are not sure that Local Authorities themselves have fully recognized, how large is the market which they influence. With the ever expanding duties and assets of Local Authorities, it is open to them, acting on parallel lines (which does not necessarily mean in combination or in concert), to exercise a steadying influence upon the demand for goods and, by following a consistent policy, greatly to strengthen the hands of the British producer and merchant as is indicated in the second part of paragraph 1 of this report.

10. While we are fully satisfied that the measures we have outlined above, of simplifying the range of a Local Authority's requirements and collective purchase of goods for all its departments, together with close co-operation in purchase between authorities on the system experiment shows to be best suited to their respective needs, are universally advantageous both as a means whereby substantial economies can be secured and also British industry helped, we are not convinced that mere extension of bulk purchasing is in itself always equally advantageous. As has frequently been pointed out elsewhere, after a certain quantity is reached in the demand for any product an additional demand may not result in any further reduction in price. Indeed, too strong a combination of consumers may strengthen the tendency towards opposing associations, or "rings," of producers and intermediaries with the ultimate effect, speaking of local government, that all Local Authorities might be forced to pay a higher price. Moreover, in too large an organization opportunities for making special purchases locally at advantageous prices may be lost. But though we do not consider that much would be gained by combined purchasing as between large Local Authorities who had already internally rationalized their own purchasing arrangements and had made their specifications available to smaller authorities as we have suggested, we think it would still be useful if the large Local Authorities consulted together from time to time and compared, and so far as possible unified, their specifications. In this way agreed standards for (say) a county and a group of county boroughs, and even for a group of counties, could be evolved; the market for commodities required by the consulting Local Authorities would be steadied; the position of manufacturers and other producers, and of merchants, would be more assured, and ultimately consumers' standards suitable for general use might be evolved.

We should point out, in case any misapprehension on the point exists, that the initiation of a system of central purchasing does

not necessitate the setting up of a central store. Whether or not to establish a central store as an adjunct to central purchasing is a separate problem which needs careful consideration according to local circumstances, and involves a study of costs of transport, storage, and management.

11. Local Authorities are not so directly concerned with the process of standardization as defined in paragraph 3 as with simplification but we are satisfied that, following the issue of the Minister's circular letter 1170 referred to in paragraph 1, they are generally aware of the advantages of specifying and using articles conforming to British standard specifications, wherever these are available, for their building, engineering, and other constructional works. We have made a survey of the position in this respect as regards articles and materials in which Local Authorities are especially interested, and we find that for building materials the British Standards Institution have already published numerous specifications which are in wide use (for example, those for cement, roofing tiles, rainwater pipes, and drainpipes), while they have numerous other specifications in preparation (*e.g.*, those for wooden windows, covering both wooden casements and frames and double hung sashes and frames, and for concrete partition slabs) which are likely to be not less useful. In this field standards either existing or in preparation cover, we think, most of the materials in which they are likely to be acceptable and these standard specifications are constantly being brought before the notice of Local Authorities by references in the model byelaws, in the technical press, and in the journals issued by the Associations of Local Authorities.

We find that there is more room for further standards in articles used by highway authorities, and we have put numerous suggestions for standardizing certain road-making tools, appliances, and other plant to the British Standards Institution.

Our attention has also been drawn to the specifications published by Departments of Government, covering a wide range of textiles and general stores. The avowed intention in publishing the specifications has been the hope that they might be adopted as trade standards where specifications of the British Standards Institution were not in existence, and we think that these specifications might be more widely used by Local Authorities.

It has also been brought to our notice that the Minister of Agriculture and Fisheries has established numerous standards for many kinds of foodstuffs, and we are given to understand that some of the larger Local Authorities specify in their contracts for supplies that home grown produce shall bear the authorized "National Mark" for graded goods. We suggest that all Local Authorities in their purchases of home grown foodstuffs should so far as possible demand the safeguard of the "National Mark."

12. It will be seen from paragraph 1 of this report that we were appointed to consider and collate information received from Local

Authorities, consulting also with such bodies as the British Standards Institution, and suggesting to Local Authorities possibilities of further combination and further economies. In submitting this report of the progress we have made, we contemplate that our duties will continue. We are in touch by direct correspondence, as well as through our members who were nominated by the Associations of Local Authorities, with Local Authorities throughout the country, and we are in touch also with all the Departments of Government interested in our work.

We hope with the advantage of these contacts from time to time to bring further information of value to the notice of Local Authorities, and in this and other ways to promote the objects with which we were appointed.

It only remains before we conclude this interim report for us to express our appreciation of the help we have received from officers of the Ministry of Health and several other Departments of Government, from the Director and staff of the British Standards Institution, and from Mr. F. W. Mackinney, Chief Officer of Supplies to the London County Council, who by courtesy of the Council has been able to put his unequalled experience at our disposal. In beginning our work we had valuable assistance from Miss L. C. Watson of the Ministry of Health, who however was soon assigned to other duties, and throughout the greater part of our deliberations Mr. T. W. Williams has acted as our Secretary. Mr. Williams has also had his departmental duties to perform, at a time when our Committee has had a good deal of correspondence, and much detailed work (such as circulating lists of commodities and discussing them with the British Standards Institution), and his carrying out of this work has been to our entire satisfaction.

We are, Sir,

Your obedient Servants,

(Signed) WILLIAM COULSON.

" F. W. DEAN.

" J. CRACROFT HALLER.

" HERBERT H. HUMPHRIES.

" W. E. MASSIE.

" MILES E. MITCHELL.

" A. N. C. SHELLEY.

" F. WEBSTER.

" GEORGE H. WIDDOWS.

" F. WILKINSON.

(Signed) T. W. WILLIAMS,
Secretary.

29th March, 1934.

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PUBLIC HEALTH CONGRESS

REPORT
OF THE COMMITTEE
ON
HOSPITAL EQUIPMENT
1934

PUBLIC HEALTH CONGRESS COUNCIL,
13, VICTORIA STREET,
LONDON, S.W.1

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REPORT OF THE COMMITTEE

ON

HOSPITAL EQUIPMENT

The Committee on Hospital Equipment was set up at the close of the year 1931 by the Public Health Congress to explore the possibilities in this country of standardisation of hospital equipment.

The composition of the Committee was as follows :—

Chairman : Professor W. W. JAMESON, Dean and Professor of Public Health at the London School of Hygiene and Tropical Medicine.

Representing the Ministry of Health :

Dr. T. CARNWATH, Senior Medical Officer.

Representing the London County Council :

Dr. W. B. KNOBEL, Senior Medical Officer.

Mr. A. WILLDEN, Principal Assistant, Supplies Department.

Representing the Society of Medical Officers of Health :

Dr. Charles PORTER, M.O.H., Metropolitan Borough of St. Marylebone.

Representing the British Hospitals Association :

Mr. R. H. P. ORDE, Hon. Secretary, British Hospitals Association.

Mr. H. K. M. TROY, Accountant at the London School of Hygiene and Tropical Medicine, acted as Secretary.

The first meeting was held in December, 1931, when the method of procedure was fully discussed, and it was agreed that the principal objects of the inquiry should be :—

- (a) To investigate the alleged diversity of specifications for similar articles and lack of any agreement as to the essential features of each ;
- (b) To summarise the work already done in this country on standardisation by the London County Council ; and also the attempts made in other countries, particularly America and Germany ;
- (c) To consider the advisability of extending simplification, standardisation and central purchase in this country.

(It should be here explained that " Simplification " has been taken to mean the adoption, in the case of any article, of the type or types most generally used ; this is the method employed in U.S.A. " Standardisation " may be interpreted as the production of a standard unit incorporating the best points of all available types ; this is the method favoured in Germany. Throughout this Report, however, the word " Standardisation " has been used to express both meanings.)

To carry out the detailed work of the inquiry it was decided to appoint a paid investigator, the choice falling upon Colonel J. W. Leake, C.M.G., R.A.M.C. (Ret'd.), who had had considerable experience in military hospitals.

After consultation with various members of the Committee, Colonel Leake commenced his investigations in April, 1932. These investigations included visits to voluntary hospitals, local authorities and government departments; a survey was also made of the available literature on Standardisation and Central Purchasing in other countries, especially Germany and the U.S.A.

THE PRESENT POSITION.

(a) THE VOLUNTARY HOSPITALS.

The voluntary hospitals were approached in the first instance by means of a questionnaire. This was addressed to nineteen hospitals in various parts of the country, and to these institutions the Committee are greatly indebted for much valuable information.

In view of the large experience of the voluntary hospitals, the Committee naturally attached considerable importance to the data furnished by them, but there is every reason to believe that, had a similar questionnaire been sent to the local authorities, or at any rate to the smaller of them, it would have revealed an almost identical state of affairs.

To demonstrate the extraordinary diversity of types of the same article in use in the voluntary hospitals is not a difficult matter. It is common knowledge that the tendency of these institutions is to move as separate units, and the result has been that, in the majority of cases, purchasing has become a matter of personal taste or local preference. It is not surprising, therefore, that the replies to the questionnaire revealed a marked lack of uniformity even in such commonly used articles as bedsteads and lockers, and that such items as blankets, hand-towels and pillow-cases showed no generally accepted measurements or quality. It was found, moreover, that dressings (to take only one example) were being purchased at prices which varied in some cases nearly 100 per cent. The reason usually given for this state of things is that some member of the staff favours a particular type. These personal opinions are often based on very limited experience, but they are accepted largely for the sake of harmony, and as a consequence the hospital is not infrequently the loser.

In the course of the investigation it was claimed by a number of hospital officers that it is necessary for them to purchase locally from firms which support the hospital. This contention is referred to later in the Report.

Technical specifications are rarely used in the voluntary hospitals. A few have made efforts in this direction, but the ordering of commodities to definite specifications is not generally practised.

For many reasons it would be unjust to blame the hospitals for the present defects. Purchasing, as the Committee see it, is an expert business, and it is too much to expect all hospital administrators, skilled though they usually are in a variety of duties, to be expert buyers and checkers in all categories of supplies.

There is little evidence of such expert buying, and a "performance" or laboratory test (where applicable) is rarely applied, owing to absence of facilities, except in a few of the larger hospitals where trained and experienced buyers have been employed with great advantage to the institutions.

The Committee are not unmindful of the attempts at co-operation and group purchasing which have already been made in certain areas, notably in Liverpool, Newcastle and Leeds, and of the commendable efforts of the Northern Association of Hospital Secretaries; but they consider there is need for organized work on a much larger scale.

The questionnaire already referred to dealt with the following sixteen articles, and called for information on the varieties of each article in use, the prices paid, the reasons for the different types, and the method of purchase:—

<i>Furniture:</i>	Bedsteads.
	Lockers.
	Bedside trolleys.
	Dressings.
<i>Textiles:</i>	Sheets.
	Blankets.
	Towels.
	Pillow-cases.
<i>Crockery:</i>	Cups.
	Meat plates.
<i>Surgical Materials:</i>	Bandages.
	Cotton wool.
	Lint.
	Gauze.
<i>Soap.</i>	
<i>Rubber Gloves.</i>	
<i>Table Knives.</i>	

This questionnaire was submitted to and freely discussed by the investigator with the administrative officials of the nineteen voluntary hospitals referred to. These comprised large general hospitals in London and the provinces, orthopaedic hospitals, cottage hospitals, and a hospital for women. The information obtained has enabled certain definite conclusions to be formed as regards the provision of some of the commoner articles in general use in the voluntary hospitals. In general, it may be stated that (a) there are too many varieties of the same article in use, differing in non-essentials only, the prices paid covering a correspondingly wide range; (b) all known methods of purchase are employed, from "retail" to "direct from manufacturers," and, except in a few instances, there is but little evidence of really "expert" buying; (c) very few attempts are made to give technical specifications of the required articles, and, in the absence of such details, accurate checking of deliveries is impossible.

By way of illustration the following examples may be given :—

Hospital Furniture. The prices paid for bedsteads were found to vary between £2 2s. 6d. and £4 15s. 6d., and the cheapest and the most expensive types were equally suitable for ordinary hospital cases ; the expensive model was painted white enamel, had silent “night rest,” and special wheels. The types of bedside lockers and dressing trolleys in use are numerous. Bedside lockers range in price from 25s. to £6. The 25s. article was “home-made” of white wood with towel-rail, drawer, cupboard and rubber castors ; the £6 article was of teak and oak, with rubber or glass top, towel-rail and chart-holder, and had a movable flap for table or seat. At eighteen of the hospitals the average price paid for a dressing trolley was £6 10s. od., but at the remaining hospital there were three models, two of which cost £20 and £17 18s. od. respectively.

Textiles. The need for definite standard specifications (*e.g.*, warp and weft, weight, tensile strength, fillings) is particularly noticeable. Only one of the hospitals under consideration purchases sheeting by such method, and in this case the material is made up in the hospital. Eight or nine different materials are in use for sheets, pillow-cases and towels, from twill to pure linen, and the range of prices paid is as follows : sheets, 3/3 to 10/6 each ; pillow-cases, 7/- to 28/- per dozen ; towels, 7/- to 23/9 dozen.

As regards blankets, three materials, twelve different measurements, and six different colours were noted. Weights vary between 5 and 9 lbs. Prices per pair range between 10/- (for a brown blanket) and 19/4 (all-wool, heavy) ; but all-wool blankets of the same size and weight were found to show variations in price amounting to as much as 5/- per pair.

Crockery. Such articles as cups and plates were of many patterns and qualities, at the following range of prices : cups 2/- to 14/9 per dozen and plates 1/- to 12/6 per dozen. Two hospitals use eleven different varieties between them, all at different prices. One quality, with distinctive markings, was found to be in use at several institutions.

Surgical Materials. It was observed that the prices paid for the same quality of cotton wool varied considerably, viz. : “Hospital” quality, 6d. to 10d. per lb. ; “Best” quality 7½d. to 1/1 per lb. Only two hospitals purchase white gauze on a definite specification. The following table of prices paid for white open-weave bandages is worthy of attention :—

1"	...	3/1 to 6/-	per gross.
2"	...	4/4 to 10/-	" "
2½"	...	6/8 to 9/-	" "
3"	...	8/4 to 15/-	" "
4"	...	11/- to 18/-	" "
6"	...	12/7 to 16/6	" "

On the whole, the smaller the hospital the higher the prices paid for bandages of similar length and width, *e.g.*, the prices of 6/- per gross for 1 inch bandages and 18/- per gross for 4 inch bandages were both paid at one of the smallest hospitals visited.

Laundry Soap. Multiple varieties and a particularly wide range of prices (22/- to 45/- per cwt.) were observed as regards Laundry soap ; at only two hospitals were purchases found to be made in accordance with a definite specification, and at these hospitals a periodical analysis is undertaken as a check on deliveries. At two other hospitals the soap is selected after analysis of samples submitted.

Table Knives. At seven of the hospitals only one type is used ; at eight hospitals two types ; and at two hospitals three types are found necessary. Stainless steel blades with welded metal handles are chiefly in favour. The range of prices paid is particularly wide, viz., 7/6 to 35/- per dozen. At one hospital a " standard " knife has been adopted, with different finish according to the intended user (e.g., doctors, nurses, ordinary patients, private patients, domestic staff).

In comparing prices paid at a large general hospital and at a small hospital for such articles as crockery, surgical materials, rubber gloves and cutlery, the higher price was invariably found to be paid by the smaller institution, viz. :

	<i>Large Hospital.</i>		<i>Small Hospital.</i>	
Cups	5/9	to 7/2 per doz.	6/-	to 9/9 per doz.
Plates	6/7	to 8/3 „ „	8/6	to 10/9 „ „
Bandages (same size)	4/4½	to 6/2½ „ gross.	10/-	to 15/- „ gross.
Cotton Wool	4½	to 9d. „ lb.	10d.	„ lb.
Gauze	5/11	„ 100 yds.	6/9	„ 100 yds.
Lint	1/2	„ lb.	1/4½	„ lb.
Rubber Gloves	11/6	„ doz.	17/-	„ doz.
Knives	12/6	to 16/6 „ „	22/6	to 32/6 „ „

The method of purchase at the large hospital is by sample and contract, and at the small hospital by " local tender," or from manufacturers' lists.

(b) LOCAL AUTHORITIES' HOSPITALS.

Hospitals under the control of large local authorities have naturally been able to make more progress than the voluntary hospitals towards standardisation and central purchase, and there can be little doubt that no county or municipal authority has given more time and attention to the subject than the London County Council. Much progress has already been made by them during the past few years, and many articles in common use in hospitals have been reduced to standard specification. Details of the work accomplished by them form a separate section to this Report and will be found on pages 14-20.

The Surrey County Council have also made considerable progress in this direction, and the following extracts from two of their Reports give an excellent picture of the manner in which a public authority approached the problem in the first instance and of the benefits resulting from the reforms introduced :—

Extracts from the Report of the Provisional Committee on Supplies, Surrey County Council, 27th January, 1931.

Central Purchasing.

Your Committee have received a comprehensive report upon an investigation which has been made into the methods by which the supplies of the various branches of the Council's services are purchased and distributed.

The Extent of the Council's Purchases.

During the financial year 1929-30, the following amounts were spent on supplies by the Council and the Poor Law Institutions in the County of Surrey :—

	£
(a) Furniture, equipment, books, stationery and fuel at schools	71,000
(b) Road materials, small plant and tools	120,500
(c) Food, clothing and necessities for the inmates of the Poor Law Institutions, Mental Hospitals and the County Sanatorium	174,000
(d) Tuberculosis, Venereal Diseases and Maternity and Child Welfare Centres	4,600
(e) Fuel and necessities at the County Hall	500
(f) Printing, stationery and office supplies	10,000
	£380,600

The Purchasing Committees of the Council.

The following are the large purchasing Committees of the Council :—

- (1) Education.
- (2) Highways and Bridges.
- (3) Mental Hospitals.
- (4) Public Assistance.
- (5) Public Health.

and the investigation shows that the purchases of the Public Health, the Public Assistance and the Mental Hospitals Committees are so nearly akin, that many of their requirements can easily be standardised.

With the exception of fuel, the requirements of the Highways and Bridges and Education Committees are largely of a specialised nature, for which there is no demand by any other Committee of the Council. In view of this, it would appear that no useful purpose would be served by disturbing the existing arrangements at this stage. Some measure of co-ordination may prove beneficial later.

The Necessity for Centralisation.

The following examples from contracts recently let illustrate the variations in the prices being paid under the present system, whereby Committees buy individually without any cognizance of the action that other Committees are taking :—

Flour	From 19/6 to 36/- per sack.
Bacon	„ 92/- to 177/- „ cwt.
Milk	„ 1/6½ to 2/- „ gallon.
Cocoa	„ 48/- to 67/8 „ cwt.

It is not suggested that the articles referred to above are of equal quality, but if the lower-priced article is of satisfactory quality, then the purchase of the other is uneconomic, and either an unnecessarily high standard of quality has been insisted upon or an excessive price has been paid. If, on the other hand, the higher price purchases the best value for money, then the purchase of the lower-priced article cannot be justified.

By grouping the requirements of all Institutions together, a larger field of competition is secured, and the benefits which result from buying in bulk become available. As the size of an order increases, so the point at which it will be accepted approaches nearer to the original source of supply, and intermediate costs and profits are eliminated.

The Standardisation of Requirements.

Under present arrangements, each Institution or Department purchases the particular brand or make of any commodity it requires, and if this practice were to continue, centralised buying would result only in the placing of the same number of orders as formerly, but through a central office. Bulk orders, representing the aggregate needs of the Council, are made possible only by the establishment of standards which represent as closely as possible the quality, grade and size best suited to general use.

Insistence on a particular make or brand of commodity entirely eliminates competition.

Your Committee understand that at the present time the various Committees of the Council are purchasing over 40 different makes of soap. It is suggested that every conceivable purpose for which soap may be used can be fulfilled by a selection from not more than eight varieties. Similar conditions apply in respect of nearly all the commodities at present being purchased.

Your Committee have appointed a Special Sub-Committee to consider the various classes of commodities required, with a view to the adoption of standards which will be suitable for use in all Institutions controlled by the Council.

Once the work of standardisation is accomplished, it can stand in the majority of articles for years, while in a few instances it may be necessary to re-standardise each time the contract is due for renewal.

Delivery.

The question of delivery is one of great importance. The problem is to get the supplies from the contractors to approximately twenty premises scattered over an area of approximately 700 square miles in the most economical and satisfactory manner.

Any rigid stipulation in the form of contract that the goods shall be delivered at such places as the Council may direct, may be the elimination from the field of competition of the very contractors who are most likely to be in a position to serve the Council satisfactorily and economically, since many factors and wholesalers have no delivery organizations of their own. Their quotations are ex-warehouse, and they are unable or unwilling to submit prices including distribution of the goods.

It may therefore prove more economical in the case of certain commodities for the Council to arrange to collect from the warehouses either by their own transport or by contract. To obtain the best results it will be necessary to consider the circumstances of each commodity separately, and as far as practicable consistent with economy, the aim should be to have the goods delivered direct from the contractor to the ultimate place of consumption; by the contractor if his allowance for delivery charges is equal to, or less than, the figure at which the Council themselves can collect and deliver, but otherwise by the Council.

Examination of Deliveries.

Unless the quality and quantity of all deliveries are in accordance with the specification and the order, many of the benefits which should result from keen buying will be neutralised. The standardisation of commodities will facilitate the checking of deliveries, as otherwise varying standards would be applied at the different Institutions, and goods rejected at one Institution might be tendered to another and accepted.

Storage.

While delivery direct to the consumer is the ideal at which to aim, there will be some instances in which this will not prove economical, as many of the miscellaneous groceries and necessities used in the Institutions are in such relatively small demand that while the total requirements of the Council may be sufficient to attract competition, any conditions as to delivery throughout the County may make the contractor decide that the business is not worth his while.

It is probable that in such cases it will prove more economical to have the goods delivered centrally and distributed periodically in the Council's own lorries.

Your Committee understand that one of the Institutions which is favourably situated as a distribution centre, has what should prove to be ample accommodation for all those miscellaneous articles which will need to be stored centrally, but a definite decision as to its adequacy will have to be deferred until the preliminary details of the scheme are further advanced.

The establishment of a central County store for such commodities should result in a considerable reduction in the amount of the total stock to be carried, as when each Institution carries its own stock it must have at hand a minimum number of each size or grade, whereas with a central store it would not be necessary to carry 16 times the amount that any one Institution would have in reserve.

Conclusions.

The chief fact which emerges from the investigation is that a considerable amount of money can be saved by the adoption of a system of central purchasing.

A year later the Central Purchasing Committee was able to report as follows :—

Extracts from the Report of the Central Purchasing Committee, Surrey County Council, 26th April, 1932.

Printing, Stationery and Office Requisites.

Your Committee have examined the existing arrangements under which the Council's printing is carried out and the stationery and office requisites are purchased.

Prior to April, 1930, each department made its own arrangements with regard to printing and stationery supplies, but when the County Hall Extension was opened, two rooms on the ground floor were allocated for use as a Despatch and Stationery Office and as a Stationery Store. The whole of the work was then concentrated under one control and all printing and stationery orders placed through one central office.

The immediate results of this concentration were :—

- (a) That all departments' requirements were satisfied promptly ;
- (b) That the number of stock articles carried as office requisites were reduced from 298 to 216 ;
- (c) That a much tighter control over issues was possible, so that although the numbers of the Staff have increased considerably since 1930 as a result of the operation of the Local Government Act, 1929, the issues have not increased in anything like the same proportion ; in some instances they have decreased ;
- (d) That so far as items not governed by contract are concerned it has been possible to purchase in bulk, with the result that in the last financial year a saving of over £500 has been made on office requisites alone.

There are innumerable qualities of papers and cards at present in use, but these have been graded according to the purpose for which the forms are used, viz. :—

- A. Pencil copy duplicates.
- B. Forms for writing.
- C. Forms for writing (better quality).
- D. Duplicating paper.
- E. Post and acknowledgment cards.
- F. Glazed record cards.

Such an arrangement will facilitate the checking of deliveries and, by enabling the contractor to purchase in bulk, should be reflected in the tendered prices.

Envelopes.

At no time has the Council entered into a contract in respect of the supply of envelopes, although the present consumption for all departments (including the Surrey Constabulary) is over one and a half millions per annum.

When centralisation took place two years ago, there were 23 different types of envelopes in use, some varying in size by as little as $\frac{1}{4}$ in., and others being different merely in the quality of the paper used. This number has now been reduced to 11.

Writing, Typing and Duplicating Papers (including Headings).

Formerly each department used a different quality of notepaper and a different style of heading, but in 1930 a lithographed plate was purchased, which is now used, suitably supplemented, for all departments other than the Clerk's.

Hitherto 80 different headings on at least 12 different qualities of paper have been used in Divisional and Local Offices, but in the new tender all such paper will be of one quality.

Office Requisites.

In 1930 there was no effective contract, and each department was buying its requirements from whatever source and to whatever sample it thought fit,

with the result that when the existing stocks were taken over in 1930 the stationery store was found to be totally inadequate to hold the multiplicity of varieties.

A process of standardisation thereupon took place, as a result of which the number of articles was reduced by 27 per cent. All subsequent supplies were obtained competitively on quotation, with the result that if the office requisites used in 1931-32 had been purchased at the prices ruling in April, 1930, the cost to the Council would have been increased by approximately £530.

Stationery and Office Requisites. New Tenders.

The quotations which your Committee have accepted show the following savings, calculated on the actual quantities used last year :—

	£
(a) On Office requisites	320
(b) „ envelopes	190
(c) „ typing and duplicating requisites ...	135
(d) „ papers and headings	411
	£1,056 per annum.

This saving is in addition to the £530 referred to in the preceding paragraph.

Financial Result, 1931-32.

The Central Purchasing Scheme has now been in operation for twelve months, and the following details of the amounts spent on certain classes of commodities during the financial year 1931-32, as compared with the amounts spent in 1930-31, are submitted :—

	1930-31.	1931-32 (Actual expenditure for 9 months $\times \frac{4}{3}$)	Saving.
1. Provisions	£ 60,897	£ 54,008	£ 6,889
2. Inmates' Clothing	6,637	5,089	1,548
3. Drugs	5,938	5,948	(-) 10
	£73,472	£65,045	£8,427

Average number of Patient or

Inmate Weeks	2,999	3,051
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The saving of £8,427 has resulted, therefore, in spite of an increase of 52 in the number of patient and inmate weeks, and a more accurate comparison would be to take the ascertained cost per head per week for each of the two years and multiply it by the average number of patients and inmates during 1931-32, i.e. :—

	Average cost per head per week.		Saving per head per week.
	During 1930-31.	During first 9 months of 1931-32.	
	s. d.	s. d.	s. d.
1. Provisions	7 9	6 9	1 0
2. Inmates' Clothing	0 10	0 8	0 2
3. Drugs	0 9	0 9	—
	9 4	8 2	1 2

giving totals, based on an average of 3,051 for each year, of :—

	1930-31.	1931-32.	Saving.
	£	£	£
1. Provisions... ..	61,650	53,690	7,960
2. Inmates' Clothing	6,630	5,300	1,330
3. Drugs	5,970	5,970	—
	£74,250	£64,960	£9,290

Your Committee submit the following comments on the above figures :—

- (1) That, although an unascertainable part of the saving is due to the general fall in the cost of living, the major portion is the result of buying in bulk, which has been made possible by standardisation and is therefore of a permanent nature.
- (2) That, owing to the many changes in the allocation of costs required by the Ministry of Health, no useful comparison of the costs of other commodities (*e.g.*, crockery, oilman's goods, ironmongery, uniform clothing, coal and coke) can be made. Nearly £22,000 was spent on these items in 1930-31, and from a comparison of the individual prices it is obvious that large economies have been effected.
- (3) That, although the majority of the contracts came into operation on the 1st April, 1931, those for some items did not operate effectively over the whole financial year.

Information obtained from other County and Municipal authorities serves to confirm the need for standardisation of supplies and bulk purchasing, and although many of the areas have taken some steps to these ends, few have made the progress of the two authorities already quoted.

The tables given in Appendix I. show the variety of prices and specifications existing in the case of commonly used articles, samples of which were kindly furnished

by a number of local authorities throughout the country. These samples were compared by experts with the standard specimens of a large local authority where central purchasing is employed, and the information given in the tables is the result of these comparisons.

THE WORK OF THE LONDON COUNTY COUNCIL.

Since the London County Council have developed central purchase and standardisation to a larger degree than any other local government authority, it would appear desirable that a brief outline of the Council's organization and practice should be included in this report.

The following is an extract from a paper read by Mr. F. W. Mackinney, C.B.E., Chief Officer of Supplies, L.C.C., at the Public Health Congress, 1932, on "Central Purchasing for Local Authorities" :—

"The department is divided into two broad divisions : (a) administrative, and (b) technical and supply. The administrative division deals with all those matters relating to supply which arise with every local authority, namely, the making of contracts and quotations, the summarising of tenders, arranging contracts and conducting all the correspondence and other work ancillary thereto. It also prepares the contractors' accounts for payment by the finance department for the Council and keeps all the necessary accounts and records relating to the department. The staff of the administrative division is the ordinary staff of a local authority, that is, a staff trained in general office procedure.

The technical and supply division is divided into branches according to the trades dealt with, and each branch is under the direction of men recruited from the trades concerned and assisted by a technically qualified staff who have either been recruited from a trade or in some cases have qualified by attendance at technical classes. An authority buying large quantities of food can only buy on the best terms and secure a uniform quality if the purchases are made under the direction of men trained in the different branches of the food trade, and the same principle applies to the purchase of fuel, printing, stationery, textiles, soft goods, clothing, leather, furniture, timber and the great variety of general goods, such as brooms, brushes, ironmongery, oils, tools, etc., etc. Qualified inspectors are also employed to go round the institutions and inspect deliveries of meat, poultry, fish, coal and other goods delivered direct by firms to the institutions.

The Supplies Department has large warehouses at which a great variety of goods are received in bulk and from which the institutions are supplied as and when required. The class of goods so handled are those which must be so handled for reasons of economy and efficiency. Bulky articles, *e.g.*, coal and flour, and perishable articles, such as meat, fish and milk, are not handled through the depôts but are delivered direct by the firms to the institutions. In some cases both systems operate, *e.g.*, barrels of oil are delivered direct, but institutions requiring very small quantities are supplied from the depôt. Of the purchases made by the Supplies Department only about one-third are handled through the depôts, the remainder being delivered direct by contractors to the place of consumption.

It is impossible to cover every trade with a separate expert, but by grouping kindred trades, it is found possible to make arrangements to secure adequate control of the quality of supplies by a man trained in the most important trades concerned and assisted by others trained in the less important kindred trades. This examination of goods required in two or more departments of the service is co-ordinated and directed by one officer.

It is extremely important, in order to avoid abuse, that as regards qualitative examination a uniform standard should be set up and consistently adhered to. This can only be obtained when examination is concentrated under a single control, and, unless such unified control is maintained, varying tests and standards will be applied and there will be nothing to prevent goods rejected at one dépôt or institution being tendered to another and accepted.

In some instances it is necessary to carry out inspection at the contractor's works, *e.g.*, in the case of furniture. The existence of an efficient examination branch quickly becomes known among contractors, and is found to have a salutary effect in greatly restricting the submission of defective materials."

A very important part of the organization of the purchase of the supplies is the examination of deliveries. This is carried out in one of three ways :—

- (a) In certain cases, as mentioned above, articles are examined at the factories during the process of manufacture in order to ascertain that the construction and materials used are in accordance with the specification. It will be realised that it is impossible in many cases to determine this after the article has been finished.
- (b) Goods delivered direct to the dépôts are examined against the standard samples or specifications by the Council's experts in the Supplies, Engineer's and Public Health Departments.
- (c) In the case of deliveries direct to Institutions samples of every article are drawn for examination against the standard samples by the above experts.

It is essential that the examination of deliveries should be carried out centrally and systematically in order to ensure that deliveries are in accordance with standards.

In co-ordinating the work relating to supplies, whether the number of institutions or places to be maintained is large or small, the first essential factor is to fix some point at which all operations relating to supplies can be reviewed, and the London County Council, when they adopted the principle of centralised purchasing many years ago, focussed this work in the Supplies Department under the direction of the Chief Officer of Supplies. All demands of the services, including the requirements of hospitals, are reviewed in one centre, and it is through this centre that all the work of administration of supplies is carried out, and in co-operation with the heads of the departments concerned the very important work of standardisation is kept under constant review.

During the gradual evolution of the activities of the London County Council the type and design of a very large number of articles have been standardised for supply to all departments of the Council.

The Council interpret standardisation as the settlement, not for all time but for the time being, of the type, design and quality of particular articles. Standardisation may be determined by means of specifications alone, or by specifications with drawings or specifications with standard samples or by standard samples alone. Constant vigilance, however, must be exercised to ensure that change of requirements is being adequately met, and that wherever possible the services being maintained reap the benefit of modern discovery and development. It should be emphasised that standardisation, although implying an element of rigidity, must be applied reasonably and with a certain degree of elasticity.

The continual review of articles for the purpose of arriving at standards and also with the object of keeping such standards up to date must, of necessity, involve the review of the functions fulfilled by such articles, and it is often the case that, instead of changing the standard, the review leads to alterations in methods and procedure, *e.g.*, the first question in any review naturally will be of what use is the article, and the answer may mean the discontinuance of the purchase of a redundant article.

The standards have been arrived at as a result of the demand and the experience gained in their use, together with the expert knowledge possessed by the Supplies Department in regard to the materials and construction. Such standards remain in force until experience or improved methods of manufacture or new materials provide reasons for their alteration.

The knowledge of trade experts can be used to bring equipment and apparatus up-to-date and to keep the standard of supplies abreast of modern developments and conditions. Even if trade experts were not engaged, the centralisation of the work into one quarter would eventually bring to the assistants engaged thereon very valuable experience and, ultimately, knowledge of trade and trade conditions, which must of necessity prove of real advantage.

Practically all the ordinary articles of furniture, textiles, clothing, cleaning materials, hardware, turnery, ironmongery, stationery and paper, oilman's sundries, paints and varnishes, engineering requisites, ropes and twines and certain articles of food are now determined by standard specifications and/or standard drawings or samples.

Wherever possible, the standards set up by the Council are those which have been determined by an authoritative body such as the standards laid down in the British Pharmacopoeia and the British Pharmaceutical Codex, and by the British Standards Institution ; in some cases standard articles in common use by the trade have been adopted ; in others, the design and construction of the trade article have been modified, usually after consultation with representatives of the trade ; in others, new designs have been originated or specifications drawn up by the Council's Engineer or Chemist for articles for which no satisfactory sample can be obtained from the trade, and sometimes the drawings or specifications initiated by the Council have subsequently been adopted by the trade for general supply.

Standardisation not only implies determination of type, but also of materials, construction, finish, etc., and it is essential in many cases that manufacturers should be consulted before specifications are drawn up. Standardisation has been mainly confined to articles in general and common use upon which there is not likely to be any divergence of opinion between the professional and the administration officers.

A catalogue of the specifications of many of the articles of equipment for the supply of the Council's hospitals, which have been standardised by the Council, has been compiled with a view to illustrating the extent to which standardisation has been adopted for this purpose by the Council, and it may serve as a basis on which to promote a general uniformity of standards. It does not include the large number of articles which have been standardised for use in other departments of the Council's service. This catalogue was available for delegates at a recent Public Health Congress Exhibition, where the Council's standard samples were displayed.

In 1930, when the Council took over the responsibilities of the 29 Metropolitan Boards of Guardians and the Metropolitan Asylums Board, it was found that there was a considerable variation in the standard of supplies to the different hospitals and institutions. At the present time practically all articles supplied (excluding surgical instruments and apparatus) have been reduced to common standard. This has been accomplished without impairing or interfering with any of the activities or the efficiency of any hospital, and without any serious complaint having been received as to the quality of the goods supplied. No serious difficulties have been encountered in applying standardisation to the supplies for all these hospitals and institutions.

The adoption of the principle of *central purchasing* automatically provides the centre at which the requirements of institutions can be reviewed and effectively co-ordinated, and, as is shown later, one of the results of centralising the purchasing of the institutions formerly under the Board of Guardians and the Metropolitan Asylums Board has been a very large reduction of staff. Under a centralised system the unit of purchase is correspondingly greater and leads to reductions in price. The small buyer must obtain his requirements in the retail market. Purchases on a larger scale can be made from the wholesale house with the consequent saving of the retailers' profits, but when the goods are required on a still larger scale, orders can be placed direct on the manufacturers and the wholesalers' profits saved. Further, in the case of a large local government authority, terms similar to those offered to the Government can often be obtained from the manufacturers at a price below that which the wholesaler purchases. It is clear, therefore, that the authority which can undertake to purchase large quantities is able to obtain much more favourable terms than the authority whose needs are more limited. In addition to the financial advantages that can be obtained through purchasing in large quantities a discount averaging 3 per cent. is mostly available for prompt payment.

In Appendix III. examples are given to illustrate the difference in cost to the London County Council of articles purchased in small or large quantities. In the case of textiles a comparison is given of manufacturers', wholesale, and retail charges.

In regard to repair of common instruments such as scissors, scalpels and ordinary types of forceps and syringes, considerable economy has been effected by the Council in keeping a central exchange stock which enables such instruments to be bought and repaired in quantity. This system is also advantageous to the hospitals in that there is no delay in exchanging instruments requiring repair.

Further, the department entrusted with the duty of central purchasing is able to advise where economy can be effected by purchasing in bulk and distributing in detail, this being a question of degree governed largely by local conditions.

The total annual maintenance expenditure of the Council's Hospitals for the year 1930-31 was £4,040,768; in approximately 34 per cent. of this expenditure lower prices were obtained for supplies as the result of central purchasing and in 28 per cent. as a result of standardisation. (Appendix IV.)

The following extract from the annual report by the Chief Officer of Supplies on the work of the Supplies Department for the year ended 31st March, 1931, shows the financial effect of the Council's organization for standardisation and central purchase :—

Economies effected in relation to Supplies by the transfer of Public Assistance work to the Council.

In considering this question, it is necessary to eliminate the saving due to the great fall in the prices of commodities during the year 1930-31, which had a very considerable effect on the "turnover" of the Supplies Department for the year. The index number for food which was 124.7 in March, 1930, dropped to 104.6 in March, 1931. Of the drop of 20.1 points, no less than 16.0 took place between July, 1930, and March, 1931. For materials other than food, the index number in March, 1930, was 118.5, and in March, 1931, 98.5, the total index numbers being 120.8 and 100.7 respectively. There was, therefore, during the year, an average fall of 20 points, equal to a fall of 16.6 per cent. on the prices prevailing at March, 1930. From these figures it might be deduced that the fall in prices saved the Council about 8 per cent. on the total purchases of commodities of all kinds made by the Supplies Department. The actual saving would depend upon the respective quantities of the different commodities purchased and the fall in price of each commodity.

The economy due to the transfer of public assistance work to the Council would arise from (a) a saving in central office administrative expenses, and (b) lower prices due to (1) bulk purchases, and (2) standardisation of supplies, thereby increasing the bulk purchases.

There can be no doubt that the merging of the administrative work carried out by the transferred authorities at their head offices, in relation to contracts and quotations with the similar work of the London County Council, has abolished a variety of policies and practices, at the same time effecting considerable economy in clerical work and the cost of printing schedules and forms of tender.

A careful estimate showed that the saving in the salaries and wages of the staff performing these administrative duties exceeded £23,000 per annum, in addition to which there was a considerable saving in printing, postage, stationery, etc.; the total saving cannot be put at less than £25,000 per annum. This

estimate is supported by the fact that the ratio of the administrative expenses of the Supplies Department to the value of goods and services arranged for has fallen from 2.07 per cent. to 1.29 per cent., a difference of 0.78 per cent. On this basis, the saving in administrative expenses would be about £37,000. The actual saving would probably lie between these two estimates.

Prior to the appointed day, in order that the work of transfer on the 1st April, 1930, might be facilitated and also to gain experience, arrangements were made by agreement with certain Boards of Guardians and School District Managers to take supplies partially or wholly from the Supplies Department on the same terms as the Council's institutions were being supplied at the time. It was therefore possible over a period of six months, while commodity prices were fairly steady, to compare in actual working the Council's system with the various systems of the authorities prior to transfer.

The comparative figures which were prepared showed that, in respect of supplies to a total value of over £62,000, the transferred authorities concerned would have paid over £67,000, or over 8 per cent. more, but the quality of foodstuffs supplied was, with a few minor exceptions, superior, and the textiles supplied were in many cases superior to, and of greater lasting value than, those previously supplied by the transferred authorities.

The definite conclusion that could be drawn from these figures was that in actual cost of goods delivered in institutions, there was a substantial saving even after giving better quality goods, which in some cases, *e.g.*, textiles, would mean a smaller consumption.

The economies due to the larger bulk purchases and standardisation cannot be differentiated, as standardisation in itself leads to larger purchases, and in the present instance standardisation led to a general improvement in the quality of supplies, particularly in foodstuffs and textiles. As regards foodstuffs, it can be confidently asserted that the cost of improved food supplies has been more than met by the economy due to larger bulk purchases. The cost of printing and stationery to the Council is considerably below what it would have cost to the transferred authorities. As regards textiles, soft goods, clothing and leather, there are direct and indirect economies due to actual reductions in price and the longer life of the better materials supplied, while, as regards the enormous variety of other articles supplied, it is known that in a large number of cases the prices paid by the Council were substantially lower owing to bulk purchases and standardisation. The variety of commodities purchased is so great that it is difficult to arrive at an all-round percentage which would fairly represent the economies resulting from the transfer of public assistance work to the Council, and a portion of the economy has been given away in improved supplies, or concealed in the cost of better, but more lasting, materials. The total value of the goods supplied to the transferred services by the Supplies Department during 1930-31 was £1,585,000. Excluding coal, coke and other fuel, farm supplies, medical supplies, etc., as to which no estimate can be formed, the supplies on which economies could be definitely calculated amounted to a total value of at least £1,200,000. On these supplies, a net saving of 10 per cent. would mean £120,000 in addition to the economies in relation to other goods ordered direct by institutions.

It can be asserted with confidence that in connection with public assistance work, so far as supplies are concerned, there is a substantial saving resulting from the transfer of such work to the Council, and its merger with similar work of the Council relating to its other services. Whatever economies have been

effected are necessarily the result of close co-operation and harmonious working between all the departments of the Council which have had a share in absorbing public assistance work into the Council's administration."

The foregoing is a brief account of the Council's organization of central purchase and standardisation and shows the advantages that have resulted. It is clear also that, by co-ordination of the supplies issued to the many different departments and institutions under the Council, considerable economies have been effected.

THE ARMY AND NAVY MEDICAL DEPARTMENTS.

The Medical Directorates are responsible for the design of equipment and for the maintenance of all stocks including medicines, surgical instruments, dressings, sundries such as gauze, gloves, catgut and rubber goods, operating theatre equipment, dental, laboratory and X-ray equipment; while the respective Contract Departments are responsible for making arrangements for their purchase.

A Committee, representing the Navy, Army and Air Force, called the Technical Co-ordinating Committee on Medical and Veterinary Stores, meets regularly to co-ordinate specifications. As far as possible trade patterns are adhered to. Many articles and commodities have already been standardised.

Purchases are arranged, to some extent, on what are termed running contracts, *i.e.*, the contract covers the requirements of the Department or Departments concerned for a certain period, in some cases one year, in others three years. No specific quantities are stated, but the contractors are given an estimate of the quantities likely to be required.

Contracts for many articles, however, are made for fixed quantities when definite requirements are known and purchase in bulk can be made advantageously.

Articles of which requirements only occasionally arise, such as operating tables, X-ray apparatus and high pressure sterilizers, are also purchased by contract as and when required.

As far as possible contracts are placed with manufacturers. Certain contracts cover the requirements of the Navy, Army, Air Force and Ministry of Pensions. Others also include the Post Office.

ATTEMPTS AT STANDARDISATION IN OTHER COUNTRIES.

(a) GERMANY.

Considerable progress has been made in Germany towards simplification and standardisation of hospital supplies, the organization mainly responsible being the Fachnormenausschuss Krankenhaus (Technical Standardisation Committee for Hospitals). This organisation, known popularly as "Fanok," was formed in 1925 under the Chairmanship of Dr. W. Hoffman, a Director of the Public Health Department in Berlin. Its activities cover practically the whole field of hospital equipment, and are pursued with characteristic thoroughness in association with the German Standards Committee and the German Standards Testing Office, both State Institutions. It is in touch with the administrative bodies of all the public and voluntary general hospitals in Germany. The organization is maintained by the Gutachterausschuss für das öffentliche Krankenhauswesen (Expert Committee on Public Hospital Administration) and the Reichsverband der freien gemeinnützigen Kranken und Pflegeanstalten Deutschlands (Union of Voluntary General Hospitals and Nursing Homes). The former Committee is representative of Local Authorities throughout Germany, and the latter is the principal organization of the voluntary hospitals. The expenses of "Fanok" are claimed to be relatively small, as most of the work is honorary. The Organization's viewpoint is best expressed in the following extract, translated from an article by Dr. Hoffman :—

" Technical rationalisation is primarily a problem of simplification of objects by control of type or size and the establishment of uniform specifications.

Standardisation in Germany has been applied to every sphere of scientific and industrial work, and in the last four years the 'Fanok' organization has applied itself successfully to the various fields of hospital economy.

Rational methods must predominate, especially on the economic side of public health work, and above all in all practical matters relating to hospitals, on which vast sums of public and private money are spent.

It does not conform to the principles of rational economics if a surgeon, for example, has his instruments made according to his own fancy, which the makers may try in vain to sell in other quarters ; or, if in a hospital a great variety of different kinds of bedsteads is kept so that a corresponding number of different mattresses, bed-clothes and pillows has to be stocked. The particular articles may be out of stock and have to be specially obtained at high cost. The maker ought not to have to keep his capital locked up in a great many different types of article, only a few of which are in general demand, the remainder merely taking up warehouse room.

Standardisation has succeeded in lowering costs by skilful limitation to a few types which appeal to as large a number as possible of those interested."

The work of "Fanok" proceeds by means of sub-committees, each of which deals with a particular class of equipment. The sub-committees are composed of hospital administrators, physicians and surgeons, and representatives of the trade concerned. Suggestions for standardisation are placed before the appropriate sub-committee and, if a case for standardisation appears to exist, a specification is drafted, and, when settled, is published for general criticism in the Organization's publication

Within a prescribed period all interested parties can communicate their views, and the whole of the ideas, objections, etc., are referred back to the sub-committee, which decides, if necessary in consultation with further experts, as to the form of standardisation. Should the alteration of the first design be considerable, a second sketch is published for criticism. When finally settled the standard is passed by the sub-committee to the Chairman of "Fanok" and the Chairman of the German Standards Committee, and before being adopted is examined by the Testing Office. Specifications approved and published by the Standardisation Committee bear the inscription DIN (Dies ist Norm—This is Standard).

Sub-committees have already dealt with the following, and other items are under consideration :—

Furniture.	Dressings, dressing cabinets, etc.
Surgical instruments.	Forms, charts, etc.
Bed linen and clothing.	Ward construction.
Vehicles and apparatus for transport of patients.	Staff-room fittings.
Disinfection and cleansing plant.	Food.
Electro-medical apparatus.	Eating and household utensils.
	Dental instruments.

The object of "Fanok" is not mere cheapness, but rather the production in sufficient quantities of models and types of high quality at a reasonable price. As Dr. Hoffman states, an exact comparison of the prices of standardised and unstandardised articles is hardly possible, as there exists no real basis for comparison, and at the outset a firm may have to alter its machinery and be obliged to charge more for the standard article; but it is expected that, with the wider adoption of "Fanok" standards and as a result of increased orders for the standardised articles, the cost of production will in the long run be much reduced. An attempt was made to compare former prices with standard prices, and a hospital bed, which had been standardised for some time, was chosen for the purpose. Before the War the usual price was about 60 RM. In spite of the lessened purchasing power of the Mark, a fair price for the standardised (and improved) bed was estimated to be the same, but in practice the average has been about 57 RM., and in some cases the price was as low as 54 RM.

The subject of co-operative or central purchasing has not been so enthusiastically taken up in Germany. In the case of the voluntary hospitals there exists the Wirtschaftsbund gemeinnütziger Wohlfahrtseinrichtungen Deutschlands G.m.b.h. (Economic League of Public Welfare Organizations in Germany), popularly known as "Wibu," which purchases wholesale and retails to its members at lowest prices. Any profits which accrue remain the property of the members and are disposed of at their discretion. Some years ago a similar organization was suggested for the public hospitals, but the proposal was not followed up. In 1927 a Committee was appointed to consider the matter, and their report is given in Appendix V.

(b) UNITED STATES OF AMERICA.

The following information has been obtained from Reports of the "Committee on Simplification and Standardisation of Hospital Furnishings, Supplies and Equipment" of the American Hospital Association.

The American Hospital Association is a pioneer in the promotion of this work, and committees on standardisation have existed since 1911. Immediately after the War, standardisation of certain supplies was studied by special committees, but the whole work was consolidated under one committee in 1923. The work of the committee since that date has been done in close co-operation with the Division of Simplified Practice of the Department of Commerce, and many "simplifications" have been effected. The Association is given representation on all committees considering projects of simplification and standardisation in which the Association is interested.

The Division of Commercial Standards of the Department of Commerce was a later development, designed to apply the same method of standardisation to quality as had been so successful in standardisation of dimensions under the Division of Simplified Practice.

The Committee on Simplification and Standardisation distinguishes between the two terms as follows :—

Simplification has to do with dimensions and, to some extent, with form and shape.

Standardisation concerns quality only.

Simplification is governed to some extent by trade demand, *e.g.*, in the case of one commodity it was found that 90 per cent. of the business covered 70 styles and colours, while there were 3,614 other styles and colours offered to satisfy the remaining 10 per cent. By eliminating the little-used types and sizes, and by concentrating on the more commonly used the cost of production was cheapened.

With some commodities it was found that dimensions and quality were so intimately connected, and that simplification found such ready acceptance in the trade (producer, retailer and consumer all benefiting), that it was possible to apply a somewhat similar procedure to the standardisation of quality.

The committee point out in their Report that their aim is not the establishment of an arbitrary or artificial standard. The intention is rather to supply specifications for articles already accepted as standard, and thus make it possible for the less well-informed to secure and use those specifications which are already in use by the expert buyers.

The American Hospitals Association's Committee benefits largely by co-operation with the Department of Commerce, the standardisation work of which is distributed between—

1. The "Federal Specifications Board," which prepares specifications for all Government purchases and
2. The more recently organized "Division of Commercial Standards," which aims not only at providing standard specifications, but also at harmonising the demands of consumers with manufacturers' standard of quality.

The specifications of the Federal Specifications Board now number over 650, and cover a wide range of commodities. For those not equipped to test materials

themselves a "Directory of Commercial Testing and College Research Laboratories" is available. The Committee on Simplification and Standardisation (American Hospital Association) has abstracted a list of the Federal Specifications Board specifications including articles in current use in hospitals, for the benefit of those wishing to reproduce them.

Another angle from which this problem has been approached is the so-called "certification plan," whereby the seller certifies either by label or separate certificate that the article conforms to the specification under which it is furnished. The Federal Specifications Board has compiled a list of the firms willing to certify in this way.

The work of the Division of Commercial Standards is of its nature very slow, and has not yet progressed sufficiently to make its results felt to the same extent as the Federal Specifications Board.

The following is an example of the procedure adopted by the American Hospital Association in obtaining a "standard":—

An article (or group of analogous articles) is suggested by the Association as suitable for simplification and standardisation. A preliminary meeting is then held under the auspices of the Division of Simplified Practice, Department of Commerce, at which there are present representatives of the Division of Simplified Practice, the Simplification and Standardisation Committee of the Hospital Association, and leading members of the trade concerned.

The advisability of simplification and standardisation having been agreed upon the manufacturing groups interested are requested to prepare schedules of the various types of the commodity in use, based on recent sales. The schedules are considered by the Hospital Association, usually in consultation with technical experts, and a joint meeting of the Association and manufacturers is then held for the purpose of formulating a definite recommendation to the Division of Simplified Practice.

Among the recent standardisations which have either been adopted or are under consideration are:—

Hospital beds.	Surgical dressings.
Blankets.	Catgut.
Mattresses.	Rubber gloves.
Chinaware.	Rubber sheeting.
Textiles.	Laboratory glassware.

It is important to note that all the above activities are conducted with the assistance of the firms interested.

Progress has also been made in the United States with co-operative or group buying—the natural complement of standardisation. The first experiment in this direction was made by the State Hospitals for the Insane in New York State in 1895, and a few years later a central purchasing bureau was established. One of the first ventures of these State Hospitals was the purchase of beef by combined contract, and later this was extended to coffee, tea and other provisions.

The next attempt arose out of a conference called by the New York City Hospital, at which most of the general hospitals of that city were represented. This group of hospitals initiated a central purchasing bureau in the year 1909, and it has functioned successfully ever since under the name of "The Hospital Bureau of Standards and Supplies." This Bureau is an association of hospitals and charitable institutions, and is supported by annual grants from its members. The management of the bureau is in the hands of a committee composed of some of the leading superintendents and directors of New York City hospitals. An expert is engaged as purchasing agent, and a scheme has been developed for standardising supplies, making contracts, supplying specifications and furnishing quotations. In 1930 there were 126 members, of which 24 were "resident" members (*i.e.*, institutions in New York City) and 102 "non-resident" members. Some of the latter are situated as far afield as China and Japan. As regards the expense of membership, it is noteworthy that one hospital claims that it has annually paid its membership "dues" from savings on the purchase of a single commodity ! Its savings in 1924 on total purchases of 39,518 dollars were nearly 5,000 dollars.

(Further details of this Organization are given in Appendix VI.)

Another notably successful purchasing bureau was developed in connexion with the Cleveland (Ohio) Hospital Council. It represents all the hospitals in Cleveland, and has demonstrated that intelligent co-operation with local interests can overcome the usual local opposition. The bureau patronises local industries where it is possible to do so ; in fact, an effort is made to interest the local industries and tradesmen in providing the necessities of the hospitals on a proper competitive basis.

ADVISABILITY OF EXTENDING SIMPLIFICATION, STANDARDISATION AND CENTRAL PURCHASING IN THIS COUNTRY.

No organized work in the direction of simplification, standardisation, or central purchasing on any large scale has so far been done in this country in connexion with the voluntary hospitals ; although, as has already been noted, sporadic attempts have been made by groups of hospitals. There have also been actual instances of co-operative buying, a notable example being the purchase of oil fuel by a group of hospitals.

In the case of the local authorities' hospitals the experience of the London County Council (pp. 14-20) and of the Surrey County Council (pp. 7-13) shows what can be accomplished.

In other fields, *e.g.*, engineering, standardisation would appear to be the rule rather than the exception. The British Standards Institution has achieved much success as the central co-ordinating influence for many industries. The Director of the Institution, writing in *The Times* of 17th March, 1933, states :—

Probably few people realise the amount of capital locked up in the enormous stocks which merchants, as well as manufacturers, are obliged to keep owing to too great variety. . . .

The Institution does not seek to prevent the expression of personal taste. That way lies loss of individuality. The sacrifice of prodigal individualism for the sake of thrifty uniformity is another matter. It is inconceivable that we should all live in identical houses, filled with standardised furniture, and wear exactly similar clothes ; but we may try, as the movement is trying on a national basis, to provide unimpeachable yard-sticks which will enable people to know exactly what they are buying, to avoid misunderstandings, and to speak the same industrial language.

There is somewhat of an analogy also between the voluntary hospitals and the public schools in so far that such terms as "individuality" and "independent status" are applied to both, and it is therefore of interest to note that the problem of effecting economies in the administration of these schools is being tackled by co-operative methods. It has been reported that the bursars of certain public schools have formed an association to enquire into the possibility of reducing expenditure. The principal objects of the association are economy, exchange of information and experience, and the putting forward of ideas to increase efficiency. Problems likely to receive attention include standardisation of stationery, and a scheme for the bulk purchase of food, furniture and apparatus.

That there is need for some simplification of types in connexion with hospital supplies is beyond dispute. An example of the admitted value of standardisation is to be found in the B.P. standard for drugs, now generally adopted by hospitals.

It should be clearly understood, however, that standardisation does not aim merely at producing the cheapest article. Its primary object is to secure a more suitable article at as low a cost as possible, by incorporating the best features of many types in an agreed specification. The ultimate result cannot fail to be a lower price, by reason of the increased demand.

It is a common experience that when a new hospital is constructed the responsible body is hampered by lack of information as to the most approved types of hospital equipment. If it were possible to consult certain ready-made standards, representing the best of experience, such hospitals would not only be enabled to save a good deal of money, but to furnish wisely in addition.

The Committee do not share the view that it is necessary for hospitals to purchase locally from firms which support the institution ; indeed, they consider the hospital buyer is in duty bound to buy as cheaply and efficiently as possible, and that local business men should compete in the open market with others. If, in order to retain their friendship, he buys at a loss to the hospital, he is failing in his duty, and no hospital should be called upon to pay an unreasonable premium for goodwill.

The Committee are satisfied that the majority of the voluntary hospitals favour the idea of simplification and standardisation, but no one appears willing to shoulder the responsibility for the preliminary steps. The subject is a delicate one. The

mere mention of standardisation antagonises many medical men, who see in it an attempt to stereotype professional practice and hamper or destroy individual initiative. On the other hand, a hospital authority may see in standardisation merely a means of cutting down expenses, and be tempted to carry the process to a stage that would stifle all growth and development. This is a real danger but, as the field is so large, the Committee think it can easily be avoided, particularly if in the first instance efforts are concentrated on the framework and all obviously growing points are avoided.

In regard to many of the commoner articles it is indisputable that a considerable reduction in the number of types, the variety of which depends often on accident rather than on deliberate design, could be effected without offending susceptibilities. It is probable that those connected with the voluntary hospitals, whether on the staff as doctors, matrons, or administrators, do not realise that insistence upon certain sizes, types and qualities of the commodities they requisition not only increases their own costs, but hinders all their fellow hospitals from obtaining as advantageous terms as they might if a reasonable measure of simplification and standardisation were adopted.

There appears to be a need for a Central Bureau where views could be exchanged, standard types exhibited, advice given to hospital officials (as one hospital officer puts it) "to enable them to be more intelligent in their choice of supplies," and where possibly facilities could be afforded for the testing of commodities.

The Committee are confident that manufacturers and suppliers can be relied upon to co-operate honestly in any attempt at simplification or standardisation, and it is recommended that their assistance be invited. That they would welcome any such attempts is evidenced by the letter from a firm of hospital equipment manufacturers which appears in Appendix VII.

As far back as 1910, King Edward's Hospital Fund for London suggested the consideration of a scheme of co-operation by groups of hospitals, and the Report of the Cave Commission on the Voluntary Hospitals (1921) states:—

The practice of co-operative buying, if applied to such things of general use as drugs, dressings, apparatus and some kinds of provisions, could not fail to produce substantial economies. The great hospitals, which already buy in large quantities, might gain little by it; but if these larger institutions would so arrange as to secure for the smaller hospitals in their neighbourhood the benefit of reduced prices, the latter would profit substantially. And co-operation in buying would have the further advantage of securing the adoption of standard specifications, instead of each hospital being left, as at present, to fix its own standards.

The establishment of one central organization for all hospitals throughout the country is out of the question at this stage on account of the considerable expenditure that would have to be incurred before the value of the scheme could be proved. Much, however, could be done gradually and without delay by the grouping of hospitals for the discussion of specifications, with a view to simplification and co-operation in purchasing. It would doubtless be found that the requirements of many

of the institutions are identical, and that much was to be gained by group buying. By such a method expenses of organization would be kept at a minimum through the utilization of existing services, and the need for central storage accommodation would not arise until the scheme developed and was well established. The Committee recognize that the major benefits of such a scheme would no doubt fall to the smaller institutions, but such benefits would be very great, and any scheme of co-operation could not fail to benefit and strengthen the entire hospital service.

In the case of hospitals with branches at a distance, the administrator knows that if each branch were to buy separately, the expenses of the whole would rise. Other hospitals have their own convalescent homes, and here again joint purchase is usually the practice. There can be no doubt that hospitals suitably grouped could obtain similar advantages.

One of the difficulties encountered is the tardy payment of accounts by certain voluntary hospitals. Such a difficulty might be lessened in the case of hospitals which benefit from central funds by agreement to accept payment of accounts incurred in respect of joint purchase as a first charge upon such grants.

The Committee admit that some respect should be paid to personal taste in the matter of technical equipment, but the field is wide enough to enable any such contentious items to be excluded. The statistics of the voluntary hospitals for Great Britain for 1930 show that, of a total expenditure of £11,230,600, commodities accounted for £4,421,400, made up as follows :—

Provisions	...	...	...	...	£2,021,290
Surgery and Dispensary	...	...	...	...	1,390,110
Domestic (estimated proportion)	...	...	...	...	960,000
Stationery (estimated)	...	...	...	...	50,000
					£4,421,400

If approximately one-third of the expenditure on "Surgery and Dispensary," say £490,000, were deducted on account of items not lending themselves easily to standardisation, there would still remain a total of £3,931,000 (or over one-third of the total expenditure) in respect of which standardisation and central purchase should effect considerable savings.

Although the figures for the voluntary hospitals are hardly comparable with those of the London County Council given on page 53, nevertheless the proportion of expenditure which the Council have found lends itself to Group purchase is also about one-third.

The following are some of the supplies which the London County Council have succeeded in standardising, and will serve to indicate the directions in which progress might be achieved :—

- Bedsteads and ward furniture.
- Furniture and equipment for Staff quarters.
- Dressings and First Aid Materials.
- Surgical, Medical and Druggists' Sundries.

Thermometers.
 Battiste and Jaconette Sheetings.
 Manufactured Rubber Goods.
 Waterproof Bed Sheeting.
 Boots, Shoes, etc.
 Textiles : Blankets, Sheeting, Towelling, etc.
 Sheet Metal Goods : Baths, Coal Boxes, Dustbins, Pails, etc.
 Brooms and Brushes.
 Oilmen's Sundries : Polishes, Disinfectants, etc.
 Soap, Soap Powders, etc.
 Printing and Stationery.

An example of the benefits accruing from central purchase is given in an article by the Director-General of Medical Services, Ministry of Pensions (Voluntary Hospitals in Great Britain, 6th Annual Report, 1924) :—

“ In November, 1919, the number of hospitals was increasing rapidly and a central co-ordinating organization was established to purchase collectively by central contracts (thus as first-hand buyers eliminating the middleman's profits), and to arrange and control the supply of food to all Ministry hospitals and institutions. Up to that time, each institution had made its own purchases locally, and the average daily cost per patient was $2/7\frac{1}{2}$. Under the collective purchasing system this figure was reduced, and at the end of 1920 was only $2/1\frac{1}{2}$ per head, saving approximately £100,000 per annum. The supply arrangements and the quality of the food were also much improved. The number of hospitals concerned was 37, with an average feeding strength of 10,170 ; a year later the hospitals numbered 60 and the feeding strength was 17,600.”

(NOTE.—This despite a “ Cost-of-Living ” index figure of 225 in November, 1919, and 276 in November, 1920.)

In order more precisely to estimate the advantages of bulk purchase, the Committee obtained samples of a number of commodities (notably textiles) used by various voluntary hospitals purchasing individually, and compared them, together with the prices, with the standard samples of a large local authority where central purchasing is employed. The examination was carried out by experts, and the results, which are given in Appendix II., show that the articles purchased in bulk were invariably lower in price and better in quality.

CONCLUSIONS AND RECOMMENDATIONS.

1. Some 30 per cent. of the total maintenance costs of hospitals is incurred in respect of goods which can readily be standardised without affecting the efficient working of the institutions or interfering in any way with the requirements of the professional staffs.

2. Amongst other advantages, standardisation results in :—

- (a) considerable economies, due to reduction in the number of types and consequent lowering of manufacturing costs ;
- (b) improvement of design, rendering the articles more generally suitable for the purpose for which they are required ;
- (c) greater ease and efficiency in the examination of deliveries.

3. The full benefits of standardisation can only be secured under a system of bulk purchase which provides for expert buying, the uniform testing of supplies and a constant review of markets and developments.

The Committee recommend :—

That the Public Health Congress should submit this report to the Minister of Health, with the suggestion that it be distributed amongst local authorities and other bodies concerned, and should urge him, in the interests of economy, to take such other steps as may be necessary to promote co-operation between these authorities in the purchase of hospital supplies.

This report would not be complete without some expression of the Committee's appreciation of the willingness with which they have been assisted in their inquiries by local authorities (more particularly the London County Council), authorities of voluntary hospitals, manufacturers and others, and to them the Committee tender their sincere thanks.

On behalf of the Committee,

W. W. JAMESON,

Chairman.

February, 1934.

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APPENDIX I.

Tables showing the variety of prices and specifications which exist in the case of some commonly used articles of hospital equipment, samples of which were obtained from six local authorities throughout the country.

The samples were compared by experts with a "standard" specimen of each commodity furnished by a large local authority purchasing centrally.

The price of the "standard" article has been interpreted as 100, and the comparisons of quality and price are shown below.

BLANKET.

Standard : All wool, 84" × 64", 3½ lbs. Price 100.

Area.	Description, and comparison with standard.	Actual Price.	Proportionate
			Price for 3½ lb. Blanket.
A	Cloth blanket, made from harsher and inferior wool, 32 × 62, 3½ lb.	82	82
B	Made from harsher, coarser and inferior wool, 90 × 70, 4 lb.	117	103
C	Made from harsher and coarser wool, 86 × 70, 4 lb.	105	92
D	Made from harsher, coarser and inferior wool, 90 × 68, 4 lb.	90	77
E	Equal to standard, 90 × 72, 4½ lb.	128	100
F	Harsher and inferior wool, 84 × 64, 3½ lb. ...	83	83

PATIENT'S SHEET.

Standard : All linen, 9' × 6', hemmed. Price 100.

Area.	Description, and comparison with standard.	Price.
A	Linen, inferior to standard, yarns irregular	74
B	Waste cotton twill, not comparable	44
C	Waste cotton twill, not comparable	37
D	Linen, unbleached, 20 per cent. lighter	86
E	Linen, quality about the same, but standard 50 per cent. heavier	100
F	All cotton, not comparable	57

DRAW SHEET.

Standard : Cotton twill, 72" × 70". Price 100.

Area.	Description, and comparison with standard.	Price.
A	Similar to standard, but not comparable as sample submitted had been washed	100
B	Quality about the same, but standard considerably heavier ...	87
C	Quality comparable with standard, but somewhat lighter in weight	79
D	108" × 70", 20 per cent. lighter than standard	92
E	Standard is better quality and heavier	85
F	Linen, not comparable	128

PILLOW CASE.

Standard : All linen, 20" × 30". Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Inferior to standard. Yarns irregular and of inferior quality ...	71
B	Unbleached calico of rather poor quality, not comparable ...	63
C	Waste twill cotton, lighter in weight, not comparable ...	74
D	Cotton, not comparable ...	50
E	Linen, quality about the same. Standard 50 per cent. heavier ...	100
F	Standard finer and considerably better quality ...	84

HAND TOWEL.

Standard : Linen huckaback, 36" × 27". Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Linen huckaback, but quality inferior to standard ...	104
B	Linen, standard considerably better quality ...	100
C	Crash linen, inferior quality ...	80
D	Unbleached linen huckaback ; heavier, coarser and slightly lower in quality than standard ...	80
E	Linen huckaback, considerably lighter in weight and somewhat lower in quality ...	68
F	Linen huckaback ; standard better quality, cleaner and better yarns ...	84

MATTRESS TICKING.

Standard : Linen, 38" wide. Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Better quality than standard, but 20 per cent. lighter in weight ...	133
B	Mixture of cotton and linen, very inferior quality ; not comparable as no width stated.	
C	Quality about the same, but width less than standard ...	109
D	Linen, superior to standard by 50 per cent., more likely to shrink	143
E	Inferior yarns and contains filling ...	163
F	Linen, but standard better quality, cleaner and superior yarns ...	96

WHITE OPEN-WEAVE BANDAGES.Standard : Count 39 × 26, weight per 2" × 6 yards. 150 grs.
Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Hospital quality, count 28 × 20, weight 100 grs., inferior in quality and weight ...	76
B	Count 45 × 23, greater count one way but much lighter in yarn ...	105
C	Count 19 × 36, weight 100 grs., cheap and inferior ...	82
D	Count 48 × 29 (over B.P.C. minimum) but weight 190 grs. (under B.P.C. minimum) ...	115
E	B.P.C. count and weight ...	118
F	Count 36 × 18 only and inferior in weight ...	75

GAUZE.

Standard : B.P.C., Count 19 × 15, weight per sq. yd. 180 grs.
Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Count 18 × 12, inferior to B.P.C.	106
B	Count 8 × 12, weight 134 grs., quality very low	80
C	Count 12 × 8, weight 100 grs., very inferior	70
D	Count 19 × 15, B.P.C. and weight correct	103
E	Ditto	106
F	Count 12 × 8, weight 112 grs., very inferior	73

WOOL, ABSORBENT, WHITE.

Standard : Hospital quality. Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Hospital quality, inferior to standard, more nep and dusty	87
B	Very inferior quality, full of nep, dusty, short fibre	91
C	Inferior to standard, full of nep, dusty	91
D	B.P.C., good quality	123
E	Ditto	120
F	Quality considerably inferior to standard	87

RED RUBBER SHEETING.

Standard : Double warp cotton, double proofing. Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Base cloth very thin, but heavily proofed. Not so flexible and much heavier	97
B	Base cloth inferior, heavier in mineral matter. Standard contains more rubber and is much more flexible	193
C	Thinner fabric, heavier in mineral matter, less rubber, not so flexible	131
D	Inferior cloth, heavier in mineral matter, thinner, not so flexible	121
E	Thinner cloth, probably more mineral matter, not so flexible, standard contains more rubber	171
F	Thin base cloth, and generally inferior to standard	100

JACONET.

Standard : Long Cloth, 44", weight of proofing 4 oz. per sq. yd.
Price 100.

<i>Area.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
A	Cloth of standard superior and proofing heavier	110
B	Ditto	168
C	Ditto	110
D	Ditto	98
(Finished article 6 mils. thick ; standard 9 mils.)		
E	Ditto	100
F	Ditto	105

APPENDIX II.

COMPARISON OF SPECIFICATIONS AND PRICES OF

- (a) Voluntary hospitals purchasing individually, and
 (b) A large local authority purchasing standardised articles in bulk.

The standard article of the local authority is shown at the commencement of each table, and to avoid quoting the actual price, this has been interpreted as 100. The prices of the voluntary institutions are given as variations of this figure.

The letters in the first column do not necessarily refer to the same institution in each table.

BLANKET.

Standard : All wool, 84" × 64", 3½ lb. Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Actual Price.</i>	<i>Proportionate Price for 3½ lb. Blanket.</i>
(a)	Fairly good, all wool, heavier than standard and generally not so good ... 4½ lb.	149	116
(b)	Fairly good, all wool, heavier than standard, and not so good ... 4 lb.	149	131
(c)	Good quality, all wool, heavier than standard and not so good generally ... 4½ lb.	138	108
(d)	Heavier, rather hempy, not so good as standard ... 5 lb.	161	112
(c)	Poor quality, hempy, heavier ... 3¼ lb.	115	108

PATIENT'S SHEET.

Standard : Unbleached linen, 9' × 6'. Price 100.

<i>Hospital</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Bleached cotton, poorer, very uneven, reedy and lighter. 30 per cent. poorer than standard ...	120
(b)	Unbleached cotton, heavily loaded; unbleached linen will last five or six times as long ...	70
(c)	Unbleached linen, quality very similar to standard. Standard rather heavier and will last longer ...	104
(d)	Unbleached cotton; unbleached linen will last three or four times as long ...	75
(e)	Unbleached linen, yarn irregular, quality 20 per cent. poorer than standard ...	108

DRAW SHEET.

Standard : Waste cotton, 70" × 72". Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Waste twill, 10 per cent. poorer than standard ...	111
(b)	Pure cotton, rather poor quality ...	140
(c)	Bleached calico, will last longer than standard, but not so absorbent ...	121
(d)	Waste twill, quality as good as standard ...	161
(e)	Linen ...	185

PILLOW CASE.Standard : Linen, 20" $\times$ 30". Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Cotton. Standard will wear five times as long	77
(b)	Linen, not as strong as standard	126
(c)	Linen, quality similar to standard	120
(d)	Linen, quality 20 per cent. poorer than standard	117

HAND TOWEL.Standard : Linen huckaback, 36" $\times$ 27". Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Standard 30 per cent. better in quality	72
(b)	Standard better, no coloured border	104
(c)	Quality same as standard	104
(d)	Standard is better quality	96

MATTRESS TICKING.

Standard : Linen, 38" wide. Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Very poor cotton. Standard all linen	110
(b)	Half cotton, against standard all linen	129
(c)	Half cotton	100

WHITE OPEN-WEAVE BANDAGES.Standard : Count 39 $\times$ 26, weight per 2" $\times$ 6 yds. 150 grs.
Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Count 28 $\times$ 48, weight per 2" $\times$ 4 yds. 181.5 grs.	104
(b)	Count 24 $\times$ 36, weight per 2" $\times$ 4 yds. 112.3 grs.	66

GREY OPEN-WEAVE BANDAGES.Standard : Count 39 $\times$ 26, weight per 2" $\times$ 4 yds. 160 grs.
Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Count 27 $\times$ 47, weight per 2" $\times$ 4 yds. 186 grs.	112
(b)	Count 24 $\times$ 38, weight 2" $\times$ 4 yds. 137 grs.	92
(c)	Count 32 $\times$ 20, weight 2" $\times$ 4 yds. 98.6 grs.	66

GAUZE.Standard : Count 19 $\times$ 15, weight per sq. yd. 180 grs.
Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Count 22 $\times$ 18, weight per sq. yd. 309.4 grs.	131
(b)	Count 23 $\times$ 20, weight per sq. yd. 269.6 grs.	121
(c)	Count 17 $\times$ 10, weight per sq. yd. 171.7 grs.	77
(d)	Count 14 $\times$ 8, weight per sq. yd. 125 grs.... ...	66
(e)	Count 20 $\times$ 10, weight per sq. yd. 150 grs.	91

WOOL—ABSORBENT.

Standard : Hospital Quality. Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Very poor quality	98
(b)	Fair quality, but poorer than standard	109
(c)	Very poor indeed	87
(d)	Inferior—more nep	105

RUBBER SHEETING, RED.

Standard : Double warp cotton, double proofing. Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Single, quality of fabric poorer, proofing can be torn off	253
(b)	Poorer proofing	164
(c)	Thinner sheeting, less proofing	206
(d)	Fabric inferior, more filling	197
(e)	Good quality, heavy	162

JACONET.Standard : Long Cloth, 44", weight of proofing 4 oz. per sq. yd.
Price 100.

<i>Hospital.</i>	<i>Description, and comparison with standard.</i>	<i>Price.</i>
(a)	Inferior in all ways—proofing and cloth	183
(b)	Poorer fabric—rubber impressions	217
(c)	Weave of cloth not so fine.	
	Lighter sample (comparable to standard)	165
	Heavier sample	200

APPENDIX III.**SAVINGS IN COST OBTAINED BY THE LONDON COUNTY COUNCIL AS THE
RESULT OF CENTRAL PURCHASING AND STANDARDISATION.****New Surgical Instruments.**

<i>Article.</i>	<i>Single Rate.</i>	<i>Quantity Rate.</i>	<i>Saving.</i>
A	7/- each	5/5 each	1/7
B	9/7 "	6/3 "	3/4
C	6/10 "	4/4 "	2/6
D	8/- "	5/10 "	2/2
E	14/- "	10/6 "	3/6
F	8/- "	6/6 "	1/6
G	11/- "	9/7 "	1/5
H	16/10 "	13/6 "	3/4
I	4/- "	2/8 "	1/4
J	3/8 "	3/4 "	4 ^d .
K	7/6 "	3/6 "	4/-
L	3/6 "	1/10 "	1/8

Repaired Surgical Instruments.

<i>Article.</i>	<i>Single Rate.</i>	<i>Quantity Rate.</i>	<i>Saving.</i>
A	1/9 each	9d. each	1/-
B	1/9 "	9d. "	1/-
C	1/9 "	9d. "	1/-
D	1/10 "	10d. "	1/-
E	2/3 "	1/4 "	11d.
F	1/9 "	9d. "	1/-
G	2/- "	9d. "	1/3
H	2/3 "	1/- "	1/3
I	1/3 "	6d. "	9d.
J	1/3 "	6d. "	9d.
K	2/3 "	1/9 "	6d.
L	5/6 dozen	2/9 dozen	2/9

Medical and Surgical Sundries.

<i>Article.</i>	<i>Single Rate.</i>	<i>Quantity Rate.</i>	<i>Saving.</i>
A	7/- each	6/7 each	5d.
B	6/2 "	4/8 "	1/6
C	6/8 "	4/10½ "	1/9½
D	7/11 "	6/5 "	1/6
E	1/7 "	10½d. "	8½d.
F	7/6 "	3/3 "	4/3
G	3/7 "	2/11 "	8d.
H	1/11 "	1/2 "	9d.
I	2/11 "	1/5 "	1/6
J	4/- dozen	2/7½ dozen	1/4½
K	2/8 each	2/2 each	6d.
L	6/7 "	5/4½ "	1/2½
M	3/7 "	2/1 "	1/6
N	3/9 "	2/1½ "	1/7½

Medical and Surgical Rubber Goods.

<i>Article.</i>	<i>Single Rate.</i>	<i>Quantity Rate.</i>	<i>Saving.</i>
A	9/2 each	6/- each	3/2
B	9/- dozen	6/- dozen	3/-
C	4/1 each	3/- each	1/1
D	1/- yard	4d. yard	8d.

TEXTILES.

<i>Article.</i>	<i>Retail.</i>	<i>Wholesale.</i>	<i>Factory.</i>	<i>Saving over Retail.</i>
A	2/3 yard	1/6⅞ yard	1/4 yard	11d.
B	8/6 each	6/6 each	5/3 each	3/3
C	10/9 "	8/6 "	6/11 "	3/10
D	2/6 yard	1/11 yard	1/6¼ yard	11¼d.
E	1/5 "	1/1 "	11¼d. "	5¼d.
F	10½d. "	8d. "	6½d. "	4d.

APPENDIX IV.**AMOUNTS IN WHICH MORE FAVOURABLE PRICES ARE OBTAINED BY THE LONDON COUNTY COUNCIL AS THE RESULT OF CENTRAL PURCHASING AND STANDARDISATION.**

(Total Annual Maintenance Expenditure of the Council's Hospitals was £4,040,768 in 1930-31.)

Central Purchase.						£
Provisions for patients and staff	...	...	...	100%		808,360
Clothing of patients	...	...	...	100%		37,034
Drugs and medical supplies	...	...	...	95%		130,303
Fuel, light, water, laundry	...	...	...	40%		209,141
Domestic renewals	...	...	...	100%		168,685
Miscellaneous	...	...	...	33%		25,000
						£1,378,523

34% of the Total Expenditure including wages is affected by central purchasing.

Standardisation.						£
Provisions for patients and Staff	...	...	...	80%		646,688
Clothing for patients	...	...	...	100%		37,034
Drugs and medical supplies	...	...	...	60%		82,297
Fuel, light, water, laundry	...	...	...	40%		209,141
Domestic renewals	...	...	...	80%		134,948
Miscellaneous	...	...	...	33%		25,000
						£1,135,108

28% of the Total Expenditure including wages is affected by standardisation.

APPENDIX V.**REPORT OF A COMMITTEE APPOINTED IN 1927 TO CONSIDER QUESTION OF CO-OPERATIVE PURCHASE FOR PUBLIC HOSPITALS IN GERMANY.**

In these days of rationalisation, the question is often raised whether the economic purchasing of supplies for hospitals would not be helped by the establishment of Central Purchasing Agencies or Co-operative Purchasing Societies. There is no doubt that the supply of hospital necessities should be managed on an economic and business-like basis, but the question cannot be answered simply by a "yes" or a "no." Both methods of obtaining supplies (co-operative and individual purchasing) have their advantages and their disadvantages. From past experience certain broad outlines can be drawn for the successful organization of centralised purchasing:—

1. The economic development of recent times has resulted in the need for supplying the requirements of hospitals by way of co-operative pur-

chasing. This is only to be recommended, however, in so far as undoubted financial advantages and no serious disadvantages accrue from it.

In itself every wholesale purchase makes possible—

- (a) the attainment of more favourable prices and conditions of purchase ;
 - (b) the reduction of administrative work connected with writing out accounts and delivering the goods, since this is necessary only at one place.
2. Centralised supplying appears to be desirable where the circle of consuming institutions is fairly large, or where a fairly large circle of consuming institutions in a definite region can without difficulty be grouped together under public control, without having to bother whether the institutions are under one and the same authority.
 3. All articles of the same kind that are required in large quantities are suitable for co-operative purchase, such as :—
 - (a) Textiles, footwear ;
 - (b) Printing and stationery ;
 - (c) Cleaning materials and utensils ;
 - (d) Typewriters and other office machines, writing materials, etc. ;
 - (e) Household articles of various kinds ;
 - (f) Fuel ;
 - (g) Victuals only in so far as they keep for some time and can reach the consumer in first-rate condition by rapid transit from the supplier.
 4. The decision as to what individual articles are to be supplied centrally is best made beforehand by agreement with the chief consuming institutions.
 5. Often co-operative purchase by the locally grouped institutions themselves will be sufficient (Purchasing Partnerships). Where, however, as in the grouping of a larger number of consuming institutions, special central supply offices are set up, these must be run on strictly economic and business-like lines. All superfluous administrative work must be avoided, and as small a staff as possible employed.
 6. Only trustworthy persons, who possess the necessary business experience and knowledge, are to be entrusted with the purchase and delivery of the goods.
 7. To avoid over-supplying, previous estimation of the exact needs is necessary. Purchasing and possible storage must correspond to the actual requirements at the time.
 8. Uniform and clear conditions of delivery are necessary to avoid disputes.
 9. For this purpose, where special central supply offices are set up, the managements of the institutions should be constantly consulted.
 10. Storage of goods in a central supply office should be confined to the absolute minimum necessary and only non-perishable goods or those which do not deteriorate should be stored at all. Larger purchases than are required to meet the needs at the time are justified only when greater advantages (*e.g.*, a foreseen rise in prices) are to be expected, always presuming that these advantages are not cancelled by loss of interest or other losses.

11. The activity of a supply office should be only of an intermediary nature, so that staff and other expenses are saved as far as possible. The delivery of goods to the individual consuming institutions should be made without any ideas of profit and at prices that cover only the actual cost.
12. In so far as supply offices are concerned with the purchase of perishable goods, the delivery should be made direct from the supplier to the consumer as required.
13. Guarantees must be given for verifying the goods as regards origin, quality, composition, etc.
14. The managements of the consuming institutions must keep in touch and work hand in hand with the central office in the matter of the state of the market, opportunity for favourable purchases, etc.
15. The supply offices in their organisation and conduct of their business must adapt themselves to the local requirements.
16. If they are successful, these supply offices may develop further and perhaps unite with each other.

As regards price monopolies, trusts, etc., an attempt should first of all be made to approach the Trusts with a view to arranging special terms for hospitals. If this fails, a co-operative purchasing organisation on the broadest basis, if possible comprising the whole of the hospitals, could probably without much difficulty finance trust-free and ring-free undertakings to supply the hospitals in defiance of the monopolistic organisations.

APPENDIX VI.

HOSPITAL BUREAU OF STANDARDS AND SUPPLIES. NEW YORK CITY.

ORGANISATION AGREEMENT.

This Agreement made the . . . day of . . . Between the following named hospitals and other institutions : . . . and such others as may hereafter become parties to this Agreement, hereinafter referred to collectively as the "Associated Hospitals."

Object : Witnesseth, that for the purpose of securing to such Associated Hospitals the advantages of co-operation in establishing uniform standards as to quality and kind of supplies ordinarily used therein, and of purchasing the same in accordance with definite specifications under continuing or other general agreements, and for the purpose of promoting the economical and efficient administration of such Associated Hospitals, the said parties hereby mutually agree to establish and maintain a central purchasing agency, to be known as the "Hospital Bureau of Standards and Supplies" in the manner following :—

Board of Directors : First : The general supervision and direction of the Bureau shall be vested in a Board of Directors consisting of one representative and an alternate elected or appointed by each of the Associated Hospitals or other institutions to represent them until successive representatives are duly elected or appointed by the respective institution concerned. As soon as this Agreement shall have been executed by . . . or more hospitals, a meeting of their representatives shall be called to organise the Bureau.

Executive Committee : Second : The immediate direction of the Bureau and the control of its funds, property and business affairs shall be vested in an Executive Committee, composed of six Directors, elected by the Board, and a Purchasing Agent appointed by the Directors so elected, and such Committee shall have power to elect the officers of the Bureau from among their own number, to appoint sub-committees, to appoint, employ and discharge employees (including the Purchasing Agent) and to fix their terms of office, duties and salaries and to adopt by-laws for the government of the Committee and regulations for the transaction of the business of the Bureau. In case vacancies occur in the Executive Committee before the annual elections they may be filled by the Executive Committee until the next annual election.

Election of Members : Third : The Executive Committee may from time to time elect institutions not named in this Agreement to participation therein, upon nomination at a previous meeting, and may also upon proper notice exclude from such participation any institution failing to comply with the terms of this Agreement, or of the by-laws established by the Board.

Resignations : Fourth : Any Associated Hospital shall have the right to withdraw from participation in this Agreement at the expiration of any fiscal year ending September 30, upon giving two months' previous notice in writing to the Secretary, and upon discharging all its financial obligations to the Bureau.

Initiation Fee and Apportionment of Dues : Fifth : Each Associated Hospital, upon becoming a party to this Agreement, shall pay to the Treasurer an initiation fee of \$50, and thereafter shall pay to the Treasurer, monthly, its proportionate share of the expenses of maintaining the Bureau. Such expense shall be apportioned by the Board in the case of Hospitals upon the basis of the "Grand Total Current Expenses" of each such hospital for its previous fiscal year in the following ratio :—

For each dollar which it is necessary to assess a hospital having grand total current expenses of \$50,000 or less per year, hospitals with grand total current expenses per year of—

More than	\$50,000 up to	\$100,000	shall be assessed	\$2.
"	"	\$100,000	" " "	\$3.
"	"	\$150,000	" " "	\$4.
"	"	\$200,000	" " "	\$5.

In case institutions other than hospitals are admitted to membership in the Association, the Executive Committee shall determine what dues they must pay and the number of votes each institution shall be entitled to cast.

Votes : Sixth : At Meetings of the Board all matters shall be determined by ballot when requested by any Director ; and each Director shall thereupon be entitled to cast one or more votes corresponding to the ratio of expense fixed by the foregoing paragraph or by the Executive Committee for the institution which he represents. No institution which has not paid its initiation fee, or whose dues or assessments are more than sixty days in arrears shall have the right to vote.

Non-Resident Members : Seventh : Institutions located outside the Boroughs of Manhattan, Bronx, and Brooklyn of the City of Greater New York may be elected to participation in this Agreement as non-resident members, and shall be entitled to all the privileges of the Association, except the right of voting and of holding office, and shall be subject to the "Organization Agreement," By-laws and Regulations of the Bureau. Each non-resident Associated Hospital, upon becoming a party to this Agreement, shall pay an initiation fee of \$25, and thereafter shall pay dues at the rate of \$200 per year for hospitals having grand total current expenses of

more than \$50,000 and at the rate of \$100 per year for hospitals having grand total current expenses of less than \$50,000.

Amendments : Eighth : This Agreement may be amended at a regular meeting of the Board or at a special meeting called for the purpose, but only by a two-thirds vote of all the Directors entitled to vote either in person or by proxy when one month's previous notice in writing of the proposed amendment has been given to each Director.

In Witness whereof the parties hereto have severally caused these Presents to be executed, and their respective Corporate Seals to be affixed the day and year first above written.

In the presence of :—

**EXTRACTS FROM THE TWENTIETH ANNUAL REPORT OF THE EXECUTIVE
COMMITTEE OF THE HOSPITAL BUREAU OF STANDARDS AND SUPPLIES
(NEW YORK CITY),**

For the year ending September 30, 1929.

The Executive Committee of the Hospital Bureau of Standards and Supplies in conformity with the By-laws, presents its Twentieth Annual Report, together with the Report of the Treasurer, for the fiscal year ending September 30, 1929, showing the funds and property of the Bureau.

Executive Committee.

Between October 1, 1928, and September 30, 1929, the Executive Committee held twenty-two meetings (ten stated and twelve special), with a total attendance of one hundred and fifty-four members. Stated meetings are held on the second Thursday in each month, and much of the committee work is accomplished outside of the stated meetings by sub-committees and in conferences.

The members of the Sub-Committees have reported in detail on specific subjects to the full Committee, their varied practical experience as hospital superintendents being always available.

The work of standardisation, of closing, revising and extending agreements, has been carried on through the year by the Executive Committee, and the results placed at the service of the members in the form of agreements, quotations and supplements setting forth market fluctuations in detail.

Agreements and Supplements.

Fifty agreements are now in force ; fifty agreements were current October 1, 1928 ; between that date and September 30, 1929, two agreements were closed, both of which superseded or replaced former ones. One of these was a short term option closed during the packing season, giving the members an opportunity to cover their requirements for canned foods and dried fruits for one-lot deliveries on arrival. Short-term agreements have shown material advantages and it is expected that similar options on canned goods and fruits will be secured annually. Bacterial counts and butterfat tests are made weekly or oftener if required, under Hospital Bureau milk specifications which establish a definite standard as a basis for this important article of diet.

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Agreements fall into two classes—local and general. Local agreements covering such articles as ice, meats, etc., are advantageous to resident members (meat, within the radius of quick express delivery from the city), but are of no benefit to non-resident institutions, except for comparative price reference or for using the specifications in making independent purchases. General agreements, which comprise the bulk of the supplies, are equally advantageous to all, irrespective of location, and contain definite provisions governing deliveries outside the City of New York.

These agreements do not bind the members to buy, but it is the spirit of the organization that the selected suppliers shall be patronized unless the hospitals can do better elsewhere. In the latter case the Bureau should be notified so that, if possible, a new agreement with a better source of supply may be substituted.

In addition to the agreements above referred to, there have been distributed, through the year, 120 supplements revising prices and details; three notices concerning agreements, price corrections, probable changes, deliveries, orders, etc.; eight lists of membership, and a list of the agreements in force. Constant attention is required to keep current agreements up to date, revising prices according to market fluctuations.

Special Quotations.

Forty-eight special lists of quotations, and seven notices regarding same, have been distributed through the year dealing with various kinds of supplies.

Aside from the agreements, the Bureau in the capacity of jobber has advanced during the year \$900,000 for purchases made on behalf of the members, which has been promptly repaid. The saving to the hospitals on these purchases runs from 10% to 50%.

NOTE.—Here are entered figures showing the growth of the Bureau during the past twenty years, under the following headings :—

Number of Members.	Operating Expenses.	Number of Orders Placed through Bureau.	Value of Purchases.
1919 ... 40	\$13,226	1,130	\$50,199
1930 ... 130	\$34,337	30,262	\$977,213

The above figures indicate the growth of the Bureau in twelve years.

The above covers miscellaneous orders placed by the members with the Bureau for execution, and are exclusive of orders placed directly by the members for supplies covered by Agreements.

Between 1919 and 1929 Membership has increased 215%, the business handled by the Bureau has increased 1700%, and expenses have increased 123%.

Members are at all times entitled to consult the Bureau, when the Purchasing Agent will place at their disposal details on file regarding many subjects not covered by agreements, or will endeavour to secure any desired information or prices. In addition to information obtained for and from members, the Bureau assists in

effecting miscellaneous purchases, buying in its own name at trade discounts given to jobbers (which in many instances would not be allowed to the members individually as consumers), and re-invoicing to the members of the Bureau. The information given by members, with details and prices supplied on request, contributes in no small degree to the success of this department of the Bureau, which is of great value.

The Bureau enters the year with a membership of 126 institutions, twenty-four resident on a contributing basis of ninety-three units; one hundred and two non-resident, of which ninety-nine pays \$200, one pays \$750, one pays \$400 per annum, and two pay \$100. A year ago the membership was twenty-six resident, on a contributing basis of ninety-four units, and ninety-four non-resident. This shows for the year an increase of six members.

A non-resident membership of one hundred and two hospitals (many of the first importance) demonstrates the usefulness of the Bureau to institutions located elsewhere than in New York City.

Current Expenses.

The Current Expenses in running the Bureau for the year have been \$29,443, an increase of \$4,502 as compared with the previous year. The current expenses for the coming year are estimated at about \$2,500 per month, though provision has been made for a possible slight increase.

Assessment of Dues.

As provided by the organization Agreement and By-Laws, estimates are prepared by the Executive Committee of "the amount to properly finance the expenses of the Bureau," and the Treasurer is then authorised to assess the resident members in the proportion fixed by Article Fifth of the Organization Agreement. Under the Article the cost of the maintenance of the Bureau is to be apportioned among the institutions participating, the assessment of each to be adjusted in the proportion which the grand total current expenses of each institution bear to the aggregate expenses of all the institutions participating, divided into five classes, as follows:—

Annual dues for the coming year for a resident institution whose grand total annual current expenses are under—

\$50,000 will be 1 unit \$120, payable \$10 per month.					
100,000	"	"	2 units	240,	" 20 " "
150,000	"	"	3 units	360,	" 30 " "
200,000	"	"	4 units	480,	" 40 " "
over 200,000	"	"	5 units	600,	" 50 " "

(There is an initiation fee of \$50 on joining the Bureau).

Those rates show a decrease of 50 per cent. as compared with rates in force the first year of the Bureau's existence.

NON-RESIDENT DUES are fixed by the Organization Agreement, viz.: A non-resident institution whose grand total expenses per year are—

\$50,000 and upwards	pays \$200, or \$16.67 monthly;
less than \$50,000	" 100, " 8.34 "

(There is an initiation fee of \$25 on joining the Bureau).

Conclusions.

The Twentieth year of the Bureau emphasises the conclusions heretofore drawn as to its value.

The Executive Committee of hospital superintendents works for increased efficiency by means of recommendations to fellow members. Apart from the many purchases made by the Bureau for members, each hospital sends requisitions directly to the supplier on acquainted conditions under the agreements, receives invoices direct and is liable for its own purchases, for which it pays the suppliers direct.

The agreements negotiated by the Bureau contain valuable information drawn from the experience of the members and obtained from various manufacturers, relieve hospital officials of labour they might have to expend on such matters, leaving more time for important duties, and also prevent much unthinking and unfavourable criticism of quality, price or methods of purchasing supplies covered by the agreements adopted by a committee of representative hospital superintendents. The standards recommended, based on interchange of information regarding practice, quality and experience, have an educational value, which should be considered in conjunction with the economies secured. While each institution preserves its autonomy, use of the standards being optional, the extent to which the members co-operate in supplying information, in using the agreements secured, in advising on questions of practice, measures the advantages to the members and the success of the Bureau. This co-operation is the essence of the Association.

The Committee is convinced from personal experience that the extension of the work of the Bureau would be desirable for other hospitals, and recommends superintendents and officers who are interested in co-operation and higher efficiency to visit the offices of the Bureau for further information.

APPENDIX VII.

EXTRACT FROM A LETTER FROM A FIRM OF MANUFACTURERS OF HOSPITAL EQUIPMENT.

9th August, 1932.

Bedside Lockers. We are unable to turn these out on the mass production principle because during the past ten years over 20 modifications of it have been made to meet the whims of hospital authorities. These modifications are quite unnecessary as regards efficiency and increase the cost very considerably. The furniture of a ward should be reduced to a minimum, and we consider that the provision of a centre cupboard which is fitted with shelves and drawers and a ward table with drawers fitted with lock and key are ample for the necessary storage.

Aseptic Metal Furniture. This class of equipment can also be standardised to a very great extent, even including operation tables. With regard to the latter, a surgeon usually adopts the pattern of his hospital school. All schools vary considerably owing to the different methods of teaching, and surgeons are generally "single-minded" with this class of equipment. We make 20 to 30 different patterns of operation table for general work; all are practically similar in foundation, all differ in accessories, yet are equally efficient, and prices vary from £50-£135.

Dressing Trolleys, Instrument Tables and Cabinets. All can be made to one standard design, made in several sizes, with facilities for any attachments that may be required.

It is difficult to give a percentage of any special pattern ; we make dozens of different designs because a medical officer usually insists on a design to his own liking.

Some dealers of hospital equipment issue catalogues up to over 2,000 pages, inclusive of instruments ; we have discussed the question of standardisation with many of our customers during the past 3-4 years, but have completely failed to make headway.

In hospitals and institutions controlled by a central authority, standardisation is to a great extent possible and costs could be largely reduced, but we do not think that the voluntary hospitals will adopt it ; they are advised by their voluntary staff and many surgeons insist not only on their own patterns but also their own supplier.

That suggests another subject for investigation—the *methods of purchasing* by voluntary hospitals.

Many of them are run on quite efficient business-like lines, but others are, we suggest, dominated by the medical and surgical staff, with the result that a deal of unnecessary waste of money occurs.

We quote the following example :—

The Secretary of a new voluntary hospital may agree to receive quotations and samples of equipment, and we quote at the lowest wholesale rates. Shortly afterwards we begin to receive a similar inquiry from perhaps three or four or even more retail houses. We quote the same low prices to them as we treat a hospital as a wholesale buyer. Our quotation direct to the hospital may prove entirely unsuccessful ; yet we may receive most of the orders from these retail houses who are better known to the staff than ourselves, who are makers, with the result that many hundreds of pounds might have been saved if a committee dealt with this matter with a firm and business-like hand. We feel tempted to lay the matter before the committee when this occurs, but must of course protect our own customers.

We have expressed ourselves candidly and trust that you will respect our wish that the information is supplied to you confidentially.

